

RAILROAD GAZETTE

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TWENTIETH YEAR.

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FRIDAY, JANUARY 12, 1877.

CHICAGO: 77 Jackson St.

BOUND VOLUMES.

The 53 numbers of the *Railroad Gazette* issued during the year 1876, substantially bound with muslin sides and leather backs and corners, making a large quarto volume of 574 pages, will be ready for sale on or about January 15 at the *Railroad Gazette* office. Price \$6.00 each. Subscribers may exchange their complete files for bound volumes on payment of the cost of binding, \$2. Missing back numbers can in most cases be supplied, price 10 cents each.

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[This index to the advertisements in the *RAILROAD GAZETTE* is published in order that they may be more convenient and valuable to those who make use of them as a directory of railroad supplies and equipment. A number of advertisements appear only "every other week" or "once a month," in such cases, where the advertisement is not in the current number, a blank appears instead of the folio opposite the name.]

Accountants:	Calhoun & Steele, 20 Nassau street, N. Y.	i
Air Brakes:	Wm. Loughbridge, Baltimore.	i
Artificial Limbs:	Geo. R. Fuller, Rochester, N. Y.	vi
Axles:	A. & F. Roberts & Co., Philadelphia.	v
Bolts, Nuts, Boiler Rivets, etc.:	Wilson, Walker & Co., Pittsburgh.	ii
Books:	Hopkins & Townsend, Philadelphia.	vii
Bricks:	American Bridge Co., Chicago.	iv
Bricks:	Baltimore Bridge Co., Baltimore.	iv
Bricks:	Cincinnati Bridge Co., Cincinnati.	iv
Bricks:	Clark, Reeves & Co., Philadelphia.	v
Bricks:	J. H. Corrode & Co., Philadelphia.	v
Bricks:	Delaware Bridge Co., 52 Wall street, N. Y.	iv
Bricks:	Edgemoor Iron Co., Wilm. & 79 Liberty st., N. Y.	iv
Bricks:	G. W. James & Co., Milwaukee, Wis.	v
Bricks:	H. S. Hopkins & Co., St. Louis.	iv
Bricks:	Kellogg & Co., Buffalo.	iv
Bricks:	Kellogg & Maurice, Athens, Pa.	iv
Bricks:	King Iron Bridge & Manufacturing Co., Cleveland.	iv
Bricks:	Keystone Bridge & Manufacturing Co., Philadelphia.	iv
Bricks:	Leighton Bridge & Iron Works, Rochester.	iv
Bricks:	Louthrop & Henderson, Trenton, N. J.	iv
Bricks:	Louisville Bridge & Iron Co., Louisville.	iv
Bricks:	Maguire Bridge Works, Buffalo.	iv
Bricks:	Wrought-Iron Bridge Co., Canton, O.	v
Bridge Bolts:	Botchkins & Gaylord, Cleveland.	v
Cars:	Barney & Smith, Manufacturing Co., Dayton, O.	—
Cars:	J. O. Bell & Sons, Philadelphia.	—
Cars:	Hartman & Hollingsworth Co., Wilmington.	vii
Cars:	J. M. Jones & Co., West Troy.	vii
Cars:	John Stephenson & Co., New York.	vii
Cars:	Terre Haute Car & Mfg. Co.	xii
Car Seats:	Geo. Buntin & Co., Philadelphia.	ii
Car Heaters and Stoves:	Baker, Smith & Co., New York.	vii
Car Wheels:	Gardner Chilson, Boston.	—
Car Wheels:	Baltimore Car-Wheel Co., Baltimore.	iii
Car Wheels:	Barnes Richardson Co., Lime Rock, Conn.	iii

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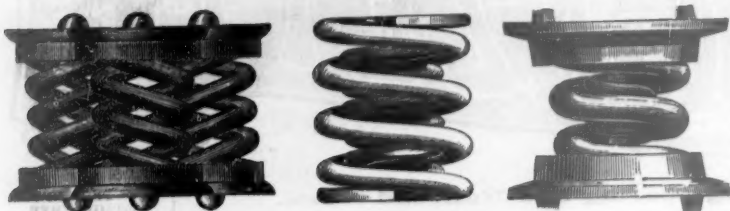
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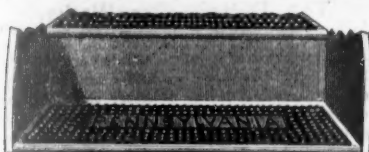
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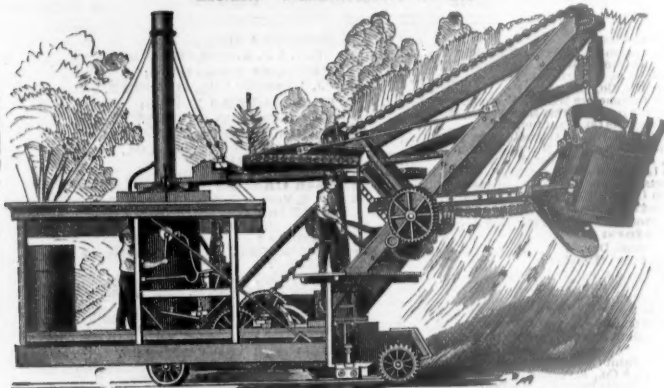


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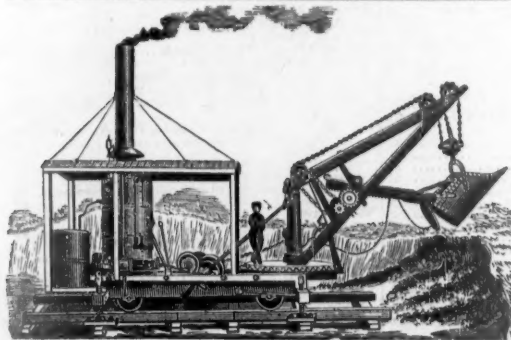
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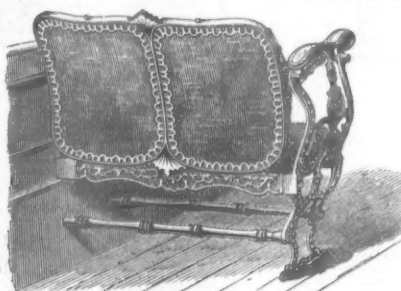
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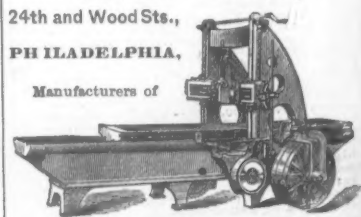
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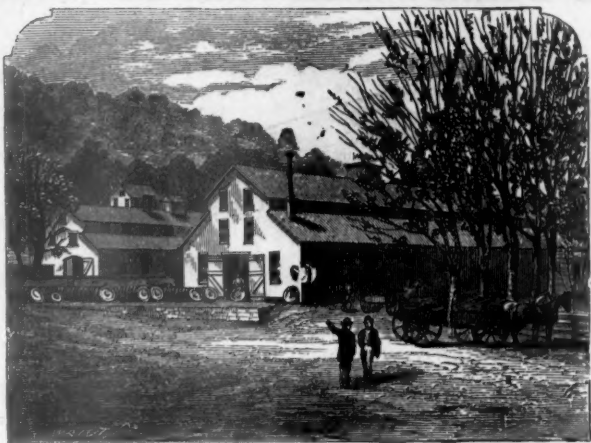
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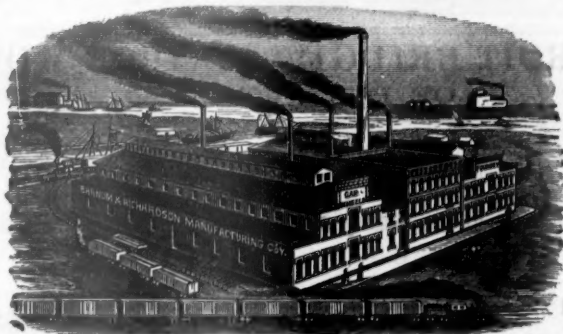


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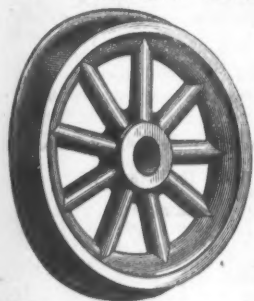
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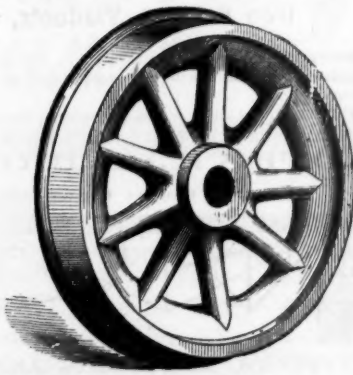
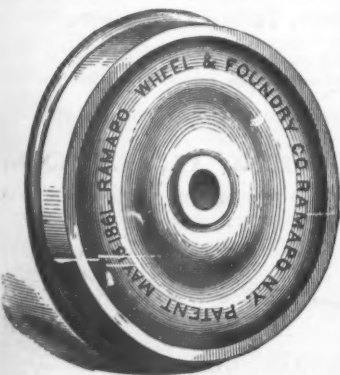
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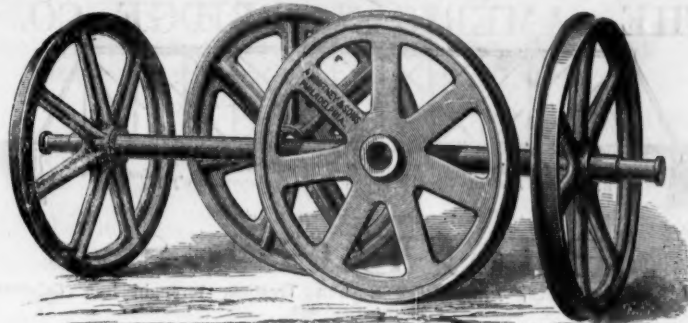
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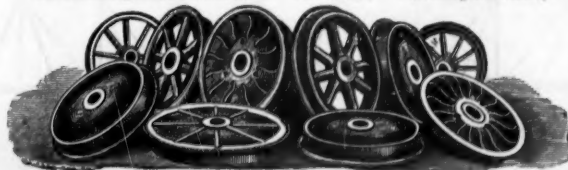
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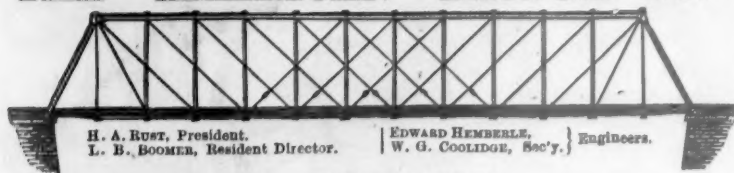
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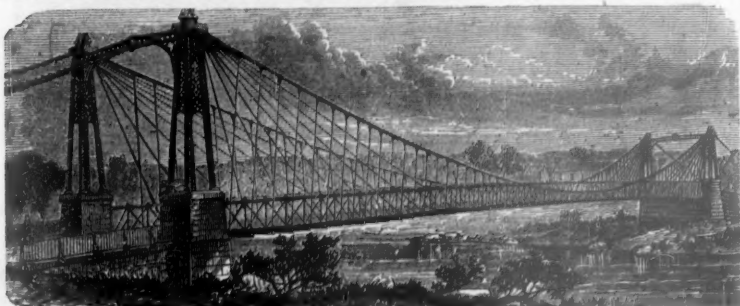
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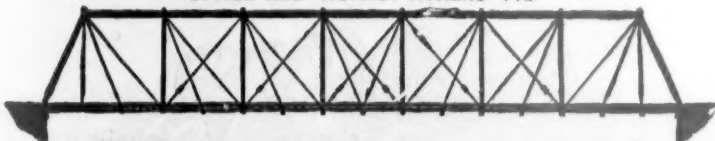
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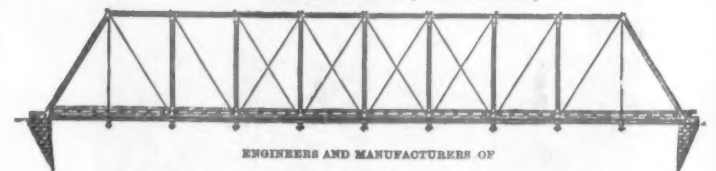
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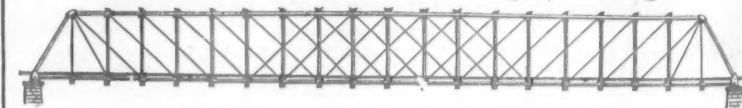
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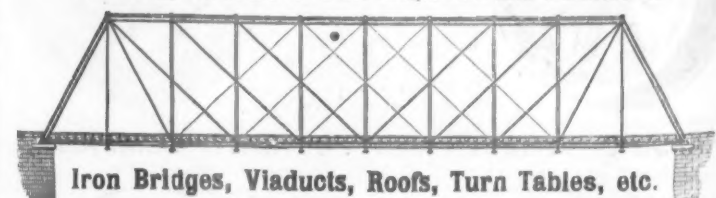
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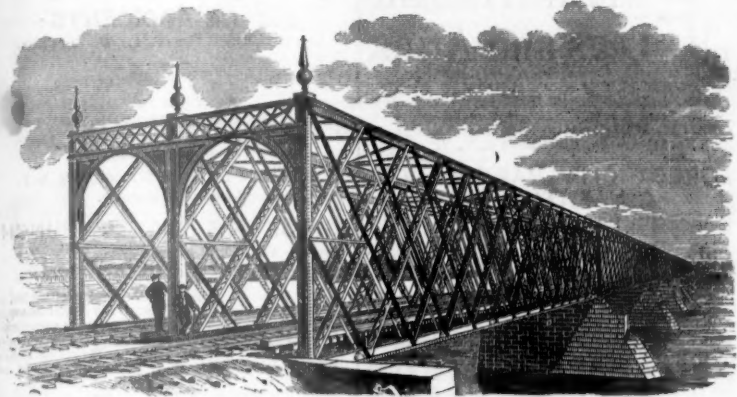
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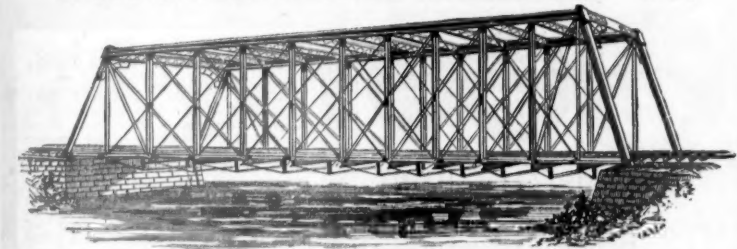
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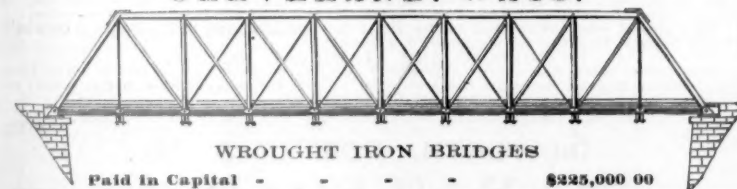


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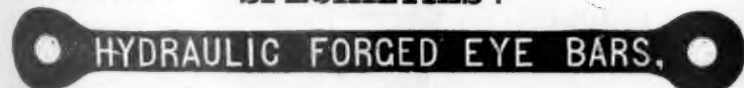
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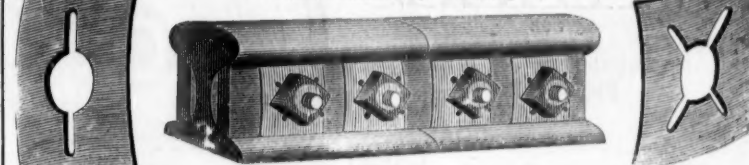
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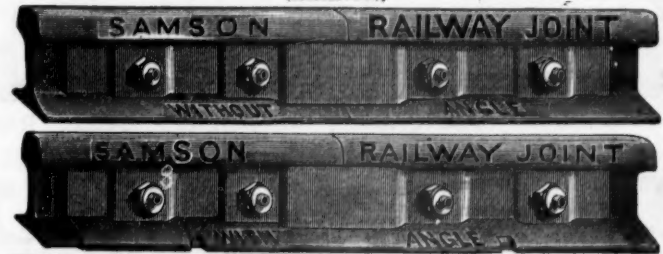
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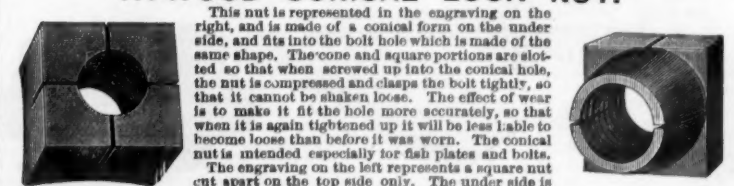
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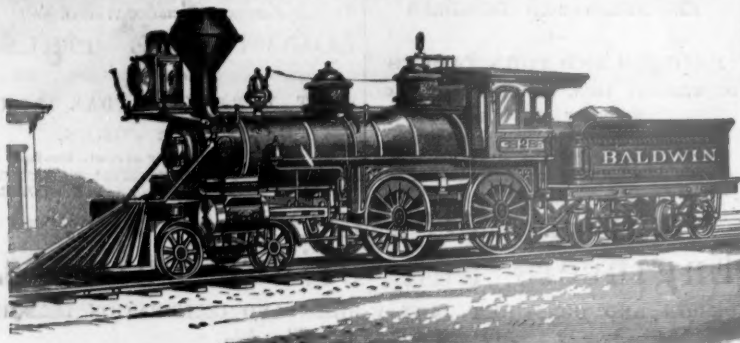
ATWOOD CONICAL LOCK NUT.



This nut is represented in the engraving on the right, and is made of a conical form on the under side, and fits into the bolt hole which is made of the same shape. The cone and square portions are slotted so that when screwed up into the conical hole, the nut is compressed and clamps the bolt tightly, so that it cannot be shaken loose. The effect of wear is to make it fit the hole more accurately, so that when it is again tightened up it will be less liable to become loose than before it was worn. The conical nut is intended especially for fish plates and bolts. The engraving on the left represents a square nut cut apart on the top side only. The under side is made concave, so that in screwing it up the hole on the upper side is contracted and clamps the bolt in the same way as the conical nut. The square nut is intended for car work bridges and similar purposes. The conical nuts are now extensively used in the track of the Philadelphia, Wilmington & Baltimore and Boston & Albany, and have been applied on a number of other railroads. It is simple in construction, being in one piece, has a longer bearing on the bolts than other nuts, and cannot strip the threads, and will always fit the bolts, no matter how loosely the thread is cut.

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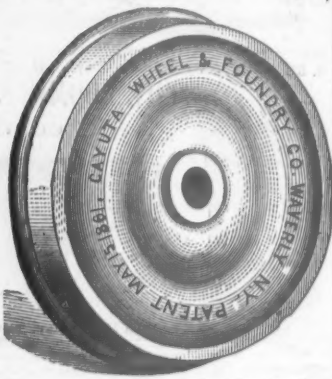
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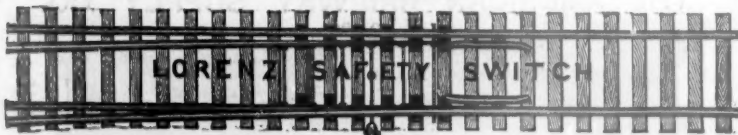
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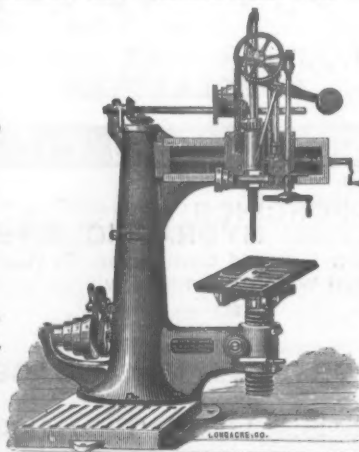
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OFFICE OF THE
UNITED STATES ROLLING
STOCK CO.

Nos. 74 and 76 Wall Street.

New York, Jan. 8, 1877.
The annual meeting of the stockholders of this company will be held at the office of the company, Nos. 74 and 76 Wall street, on Monday, the 8th day of February next, at 12 o'clock m., for the reception of the annual report, the election of five Trustees for the ensuing year, and the transaction of such other business as may be brought before the meeting.
A. HEGEWISCH,
Secretary.

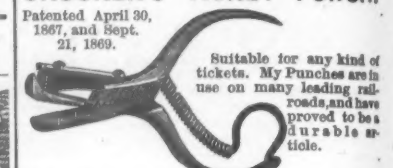
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N. B.—Any punch with spiral springs to throw of tickets is an infringement on my patent. All persons are warned against purchasing them.
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WEATHER-STRIPS—the oldest, the
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We employ experienced and respon-
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satisfaction. We send, free of
charge, men with samples and prices
to measure and give cost.
We warrant them good for 5 YEARS.
Patent Metallic Weather-Strip Co.
812 BROADWAY, N. Y.



FRIDAY, JANUARY 12, 1877.

The Career of Cornelius Vanderbilt.

The following sketch of the life of the late Mr. Vanderbilt we copy from the New York World:

Cornelius Vanderbilt was born May 27, 1794, in his father's farm-house, near the old quarantine ground, Staten Island, the oldest of nine children, and named after his father. The father was a hard-working farmer—a rather plodding, fairly prosperous man, somewhat given to rash speculation on a small scale and not always successful. Mrs. Vanderbilt was singularly energetic and prudent, and the genius of the house, saving the farm from sale on one occasion when her husband's speculations had been disastrous, by producing an unexpected hoard of gold pieces and paying off the debt of \$3,000. Cornelius Vanderbilt, Sr., carried his produce to the New York market in a small boat, which his son learned to manage before he had learned to manage his books. The boy, indeed, had slight opportunities for study. He went winters to the district school, which was of no great merit, and learned to read and write and cipher a little. The latter accomplishment he was compelled by hard experience to elaborate later in life. As a boy he was bright, active and energetic, of well knit and lithe frame, fond of out-door work above all things, and notably a fearless rider and passionate lover of horses. It is said that he rode a race when insignificantly young, indeed when six years old, if the story is to be believed. Next to horses he put his faith in water and boats. As he grew up he was intrusted with the peripatetic load of produce for New York, and soon became famous for his skill in handling a sail-boat. To get a boat of his own he asked his mother for \$100. She refused it at first, and then told him if he would earn it he should have it, and gave him a month to plough, harrow and plant a rough and stony eight-acre lot. He closed the bargain at once, and with the help of some of his boy friends, got the work done within the appointed time, and on his sixteenth birthday became master and owner of a sail-boat. Staten Island was a very thinly settled region then, and New York had only 80,000 inhabitants. Young Vanderbilt's father had recently added such ferrying as was to be done to his other pursuits, and his son now replaced him. He ran his boat daily from the quarantine ground to the Battery, carrying twenty passengers, when there were so many to be carried, and began to be known as steady and responsible, without vices, and, humanly speaking, certain to accomplish what he undertook. In two years, although returning the lion's share of his earnings to his parents, he had saved a thousand or two for himself. The war of 1812 came, and the war vessels in the harbor and the garrisons in the forts gave him plenty of business. An important step in advance was his successful bid for a contract to carry provisions to the forts in the neighborhood during the three months for which the militia had been called out. His was the highest bid of the forty odd put in, and he put it in only at his father's request, expecting nothing from it. To his surprise the award was made to him, because, as Matthew L. Davis, then commanding general, told him, "We want this work done."

Young Vanderbilt carried out the contract faithfully, working night and day, and supplying six forts—Fort Richmond, Bleecker's Island, Governor's Island, Hell Gate, Ward's Island and Harlem—each needing one boat-load a week. The confidence placed in the young boatman is illustrated by another anecdote. In September, 1813, during a heavy gale, several British vessels attempted to run past Fort Richmond and were repulsed. The commander of the fort expected a renewal of the attempt, and anxiously sought for means to send to the city for reinforcements. "Young Vanderbilt can do it if anybody can," his subordinates told him, and young Vanderbilt was sent for. Yes, he would try it, "but," he added, "I shall have to take your message part of the way under water." The message was taken, and next morning the fort was reinforced. In 1814 the young boatman had saved enough to build a schooner for himself, and named it the Dread. The next year he built a larger one, the Charlotte. With this vessel, when the summer work in the harbor was over he began to make trips down the coast, carrying considerable freights. By 1818 he had three first-class schooners and \$9,000 cash savings.

Here the second episode of his life began. Steam-boating was not half so old as he, and Fulton and Livingston yet had the monopoly in New York waters. Seeing that steam-boats were the coming boats, young Vanderbilt at once looked about for an opportunity to get some control of or interest in them. Mr. Thomas Gibbons was a leading man in this new business of steam transportation, and to him the young ferryman applied. Very successfully, too, it appeared, for he was at once made the captain of a steamboat at the then large salary of \$1,000. Thus he became dignified with his first naval title, and for many years, until prosperity promoted him to the title of Commodore, he was known as Captain Vanderbilt. The steamboat he commanded ran to New Brunswick, N. J. It was in those days necessary, in order to visit Philadelphia from New York, to take three conveyances—a steamboat to New Brunswick, from there a stage-coach to Trenton and a second boat from Trenton to the Quaker City. Of the first stage of this long and roundabout route the captain had charge, and there for the next twelve years he remained.

The original of this card, which was picked up on the steamboat Emerald fifty years ago, is in a collection of curiosities made by a New York lady, having, moreover, a romance attaching to it which has nothing more to do with Mr. Vanderbilt than that he was captain of the steamer at the time:

UNION LINE,
FOR PHILADELPHIA
AND BALTIMORE,
THROUGH IN ONE DAY TO PHILADELPHIA.

At 6 and 12 o'clock A. M.

25 MILES LAND CARRIAGE.

Via New Brunswick, Princeton and Trenton.

FIRST LINE (Morning). The Elegant Steam-Boat **THISTLE**, Capt. G. JENKINS, will leave the wharf North side of the Battery, foot of Marketfield street, at 6 o'clock A. M. every day (Sundays excepted). Passengers arrive in Philadelphia by the Steam-Boat **TRENTON**, Capt. A. Jenkins, same afternoon. Fare, only \$4.

SECOND LINE.—The splendid new Steam-Boat **EMERALD**, Capt. C. Vanderbilt, leaves the wharf as above, at 12 o'clock noon, every day (Sundays excepted). Passengers will lodge at Trenton, and arrive at Philadelphia, by Steam-Boat **PHILADELPHIA**, Capt. J. G. Jenkins, at 10 o'clock next morning. Fare, only \$3.

P. S.—The Baltimore Union Line Steam-Boat leaves Philadelphia daily at 12 o'clock (noon).

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Second Office in BROADWAY, and at the Office in MARKETFIELD STREET, or on board the Boat.

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New York, Sept. 15, 1826.

Joseph C. Spear, Printer, Corner of Wall and Water Streets.

Twelve years on a steamboat plying between New York and New Brunswick, sounds tame, and many people familiar with the great railroad magnate and informed of the energy that early characterized him, have doubtless wondered at the length of this period. But there were no other reasons than the obvious one which induced him to remain in this position, and it will presently be seen that the life, far from being tame, possessed an excitement singularly congenial to his plucky nature. The captain was a married man at this time, and living being cheaper in New Jersey than in New York, had removed his wife to the other end of his route, the village of New Brunswick. That passengers required other attentions than that of being conveyed as speedily as possible from point to point, the captain early discovered, and that the keeping of a hotel might add much to the profits of landing people in New Jersey he concluded. Thus it was that his wife became the mistress of the village inn, and the income of the captain became largely increased, and in vain did the Stevenses and other rival firms of the Gibbons endeavor to persuade the captain to accept other positions in their employ. A difficulty of his employer with the firm of Fulton & Livingston furnished the exciting events of this period referred to above, events that brought the young captain conspicuously forward and established him in such relations with his employer that the latter could do no less than to push him ahead. In short, Captain Vanderbilt exhibited on behalf of his employer in those days the fighting qualities that he has since shown in his own battles.

HIS PART IN A GREAT CONSTITUTIONAL POINT.

The State of New York had granted to Fulton & Livingston the exclusive right of running steamboats in New York waters. Mr. Gibbons believed this to be unconstitutional, and, indeed, so it was finally declared by the Supreme Court, and in defiance of the law ran his boats regularly. A long battle with the authorities of New York ensued, in which the young captain figured conspicuously. For two months daily attempts were made to arrest him, but the captain more than baffled the early Metropolitan Police. He had a plan of disembarking his crew (who were also liable to arrest) in New Jersey, and bringing his steamboat to the wharf with only a small boy at the helm, himself below attending the engine, and of concealing himself in the hold when, after reaching the wharf, his vessel was boarded by the officers of the law. And this strategy he successfully carried out to the confusion and demoralization of the police for many weeks. When ready to start on the next trip the captain would mysteriously appear from below and answer to the announcement by some official that he was a prisoner, would quietly rejoin, "I think, sir, more likely you are my prisoner; cast off the lines," and the official terrified at the thought of being carried within reach of Jersey law where a retaliatory act threatened him with the State prison, had no resource but to jump overboard or beg to be set on shore, with which request, it is said, the captain always magnanimously complied. The fight was as old as Vanderbilt's relations with Gibbons. In 1819 he was master of a small steamboat called the Bellona that ran from Elizabeth, N. J., and touched at Staten Island, bringing passengers to New York. Gibbons, its owner, was enjoinied by the Chancellor from running her in the waters of New York, under the Livingston and Fulton monopoly. She was run on Sunday from Staten Island, after service of the injunction, and thereupon Vanderbilt was arrested and taken before the Chancellor at Albany to answer for the contempt. He cleared himself by proving that he ran the boat on Sundays for D. D. Tompkins, who held a license under Livingston and Fulton, and who had hired the Bellona from Gibbons to bring passengers from his wharf on Staten Island to New York on Sundays for one month. A few years afterwards Mr. Webster, in the celebrated case of Gibbons versus Ogden, made the famous argument in the Supreme Court of the United States which utterly demolished the monopoly of steam navigation that had been granted by the Legislature of New York to Livingston and Fulton, and which had been sustained by all the New York Courts. In that decision Captain Vanderbilt was a made man. The Jersey line, which he was then running, was placed entirely under his management and at once began to yield an annual income of \$40,000.

It is said that Mr. Gibbons, delighted with the captain's outwitting the officials, offered at that time to raise his salary to \$5,000 a year, which offer he refused, replying, "I did it on principle. I never cared for money. All I have ever cared for was to carry my point."

IN BUSINESS FOR HIMSELF.

At the end of his twelve years' service on this line Captain Vanderbilt found himself, at the age of thirty-five, worth \$30,000. He then decided to go again into business for himself, and refusing the advice of a liberal offer of his employer, he built his first steamboat. She was only a small craft, the Caroline, afterward made famous from plunging over the Niagara Falls. His success now was more slow. He had much to contend against. Other steamboat lines had sprung up thick and fast about New York, and many were backed by great wealth. Repeated were the attempts made to "run off" his boats, but the captain, though completely exhausting his fortune, compelled each line to compromise, as one after another they interfered with him, until at last, and none too soon for the captain, it was thought best to leave him alone.

After this the number of Captain Vanderbilt's boats increased almost as his days. Beyond this point it is no longer possible, in a brief sketch, to follow the details of his business in this line. The steamers he introduced upon the Hudson were marvels in those early days. He was no longer called captain, the rank of commodore was hardly deemed sufficient, and soon he stood forth and was pointed to by all men, including his old antagonists, as the "Steamboat King" of America. He built for himself thirty-eight steamers, the names of which are familiar even now—Caroline, Citizen, Cinderella, Westchester, Union, Nimrod, Champion, Cleopatra, Augusta, Clifton, C. Vanderbilt, New Champion, Commodore, Gladiator, Staten Islander, Huguenot, Sylph, Hunchback, Red Jacket, Kill-von-Kull, Westfield, Clifton No. 2, Clifton No. 3, Cornelius Vanderbilt, Wilmington, North Carolina, George, Traveller, Direction, Central America, Clayton, Bulwer, Linneus, Thistle, Emerald and Swan. Of these he lost none by fire, explosion, or wreck.

There belong to this period of his life two or three incidents often related of him. In pursuance of a maxim of his, "Never tell any one what you are going to do till you have done it," he bade Mrs. Vanderbilt good-by one day in 1850, and was seen to go aboard his steamer Prometheus and depart for somewhere. His boat Central America went after him in tow. For a good while there was no clue to his whereabouts, except that report said he had been seen standing in his office and figuring with his fingers upon a wall map of the Isthmus. He turned up again in six weeks, and immediately organized the Pacific Mail Accessory Transit Company, to lap the immense Pacific Mail carrying trade between San Francisco and Panama. He had carried his steamboat up the rapids of the San Juan—a tremendous task—and put her on the lake ready for business.

In 1853 the Commodore went to Europe in the North Star—his own steamer, of course—and a notable trip it was, as everybody remembers. The large yacht—she was 360 feet keel—was superbly fitted, and the Commodore's family and immediate relations, a party of twenty-three in all, sailed on her May 27 and returned Sept. 23. They steamed 15,000 miles in all, making one or two landings in Great Britain, but devoting most of the trip to the Baltic and the Mediterranean.

In 1855 the Commodore built the Ariel and Vanderbilt, to run as an independent line to Havre, but at this time he was looking forward to the still greater work of carrying passengers and freights by rail. In 1862, the war being well under way,

one of the great difficulties of the Government was the transportation of large bodies of troops. The navy was—what it was: and Vanderbilt had a steamer to spare out of his navy. So he wrote to Secretary Welles, offering the Vanderbilt as a free gift. In his letter he said:

"I am induced to make this communication because of my desire to protect the Government against speculative attempts, and also to make it known that there are vessels of a capacity to meet all requirements, without resorting to vessels belonging to the so-called Confederate States or to those sailing under a foreign flag."

The Merrimac was just then in her glory, and the Government accepted the vessel, but fitted her out as a ram, protecting her engines with cotton bales, and sent her to sink the Merrimac. President Lincoln, the Secretary of War and the Commodore went down on board of her, but the Merrimac did not come, and was afterwards disposed of otherwise. The Vanderbilt, however, which was a magnificent ship, and cost \$800,000, did good service during the rest of the war. She towed the Monadnock to San Francisco, and was some years ago sold at that port to a firm of shipowners. She is now the ship Three Brothers. Congress returned the thanks of the country to the Commodore "for his unique manifestation of a fervid and large-souled patriotism," and ordered a gold medal struck and sent to him. The medal weighs six ounces. It is three inches across. On the reverse is the Commodore's likeness, and the legend "A grateful country to her generous son," and on the obverse two female figures in bas-relief in the foreground, representing "Riches" and "The Sea," and in the background the steamer Vanderbilt.

HIS FIRST PURCHASE OF RAILROAD STOCK.

It was about 1857 that the Commodore began to be convinced that railroads, and not steamboats, were his element, and he dropped his steamboats as quietly as years before he had given up sailing vessels to adopt them. He had large cash accumulations. He began with New Jersey Central, and in 1863 he bought Harlem modestly. Harlem was in no very promising condition at the time. The bears were feeding on it and it had got down and down to 3 cents on a dollar. Wall street misjudged the Commodore, and considering him of life passions as itself, set out to treat him accordingly, and with some resentment that a new hand should venture to lay hold of so old a bone at the start. But Vanderbilt was in no sense a speculator. He believed in himself and in all his works, and proposed to have whatever he was interested in prosper. He worked his railroads for the uses of them and not for the uses of the street, and from the first stood by them in good report and evil report and forced success out of all of them. Indeed, when he was making his beginning with Harlem the street soon found out this new fellow's method, and with more or less grief to itself has had reasons of renewing the discovery ever since. Harlem stood at 3. He began to buy it and brought it up to 57. "I've got a few millions lying idle," he said to a wondering acquaintance, "and Harlem is going up to par if we give it time. If I don't get the benefit of it, my children will." This amused the brokers. Buying Harlem for an investment was so downright absurd, and they accommodated him freely. He bought all winter. In April there began to be reports that Harlem had got something—a street franchise down Broadway to the Battery, some said, but couldn't find anything of the sort in the charter, and it looked rather improbable, and this franchise was just what it had always hungrily lacked. April 21, in the evening, the Common Council with great haste made precisely that grant, and when the news got to the brokers away went Harlem up to 75. The Commodore had calculated on this much, but foresaw storms as well, and determined to hold up his stock in all calamity. A large "bull" element in the street helped him, and during that summer what is remembered for its sudden disastrous alternations of ebb and flow as "The Chancellorsville Rise" of stocks followed. Late in June a queer thing began to happen, namely, that the Common Councilmen who had been so generous of their franchises began to sell Harlem short. Then they rescinded their generous ordinance, as the Commodore had all along expected, though they thought they were being scampish enough to take him in. Before that Judge Brady, in Common Pleas, had enjoined the laying of rails in Broadway, and on the whole it looked like disaster for the Commodore's stock. So the merry brokers sold short, and the stock dropped to 72, and rebounded and fell again in its new summer fashion. The Commodore had two motives now—one the safety and the success of his stock and the other the bitter punishment of its assailants. "I bide my time," he said, and he silently bought block after block of the stock. When settling days came there was no stock to be had; the Commodore's small assailants of the Common Council were ruined and their allies of the street in dire straits, for up went Harlem to 115, 120, 130, 150, 180! "Short of Harlem" and "smashed" were synonyms the rest of that season.

The Commodore was always ruthless till he got through his work. Then he had time to be placable—in spots. He showed mercy to Uncle Dan'l Drew in later days, and in this "first Harlem corner" lent stock for delivery to one of the City Hall rogues who had tried to sell him out.

And now he began to be let alone for a while. He took care of his railroad, repaired its track, bought new rolling stock and managed it as to his notion a railroad ought to be managed, namely, to make money with decency and to go ahead. He had occasion to make himself felt in the street a year after, in April, 1864, when the fall of Anthony W. Morse had sent panic down the stock-list. It never was Vanderbilt's habit to let his stocks go down. Harlem hung between 75 and 90 in the winter of '63-'64, and the matter of the franchise was before the Assembly and favorably entertained. Numberless outsiders bought Harlem accordingly, and it had got to 150 when the Assembly played the old Common Council trick, and an unfavorable report on the franchise bill in March dropped the stock to 101. The hopeful bears still sold short, and the Commodore had them. He sent pale, nervous John Tobin to buy, and Tobin bid for and bought thousands of shares—Leonard Jerome was buying, too, at this time, as Addison Jerome, now a seller, had bought in the first corner—and in ten days Harlem was at 150 again. In a week more it was 185, and when the panic came in April stood, without a tremor, the only unshaken stock of the kind, at 190 and 200. The pool had 27,000 more shares, including contracts, than the capital stock of the road.

"Put it up to 1,000," suggested the Commodore relentlessly. That would have been easy and suited the Commodore's desire to make himself extremely plain when he had been miscomprehended. His allies objected—John Morrissey was one of them—on the ground that to do that would break every house in the street. That was not too much of an exaggeration, and they compromised on "300 or thereabouts," and on the day the stock had jumped to 285, contracts for the delivery of more than 15,000 shares matured. Hundreds of the Commodore's enemies who had piled short sales on short sales (including a squad of his traitorous legislative friends) settled at 285, and lost a million at that figure, and so deeply were the "street" and its hangers-on involved, that nobody to this day—so far as we know—has guessed at the total winnings of the Commodore and his allies. Cunning old Daniel Drew, by threatening to resist payment on the plea of conspiracy, and that his "calls" were permits to the Commodore to call forever, or as long as he liked, but no contracts to pay anything at all, opened the way to a compromise and got off for about a million.

GETTING CONTROL OF CENTRAL.

Central was a bad stock in these days, and Vanderbilt, with his face set toward the West, wanted it. The first step was Hudson, which he acquired in the year 1864.

Hudson had been chartered since 1846, and had been running through to East Albany since 1861, but its projected double track was only partially laid, and the construction had been costly. It was limping, in short. He built new station-houses, completed the double track, put on more trains and powerful locomotives, and shortened the time between here and Albany. The business of the road sprang up at once with new life and overcrowded the freight depot here. Vanderbilt bought old St. John's Park, in Hudson street, for a million, and put up the immense depot to which his freight cars now go through the busiest city streets. The remarkable bronze jewel on the western front of the building—a colossal allegory of Vanderbilt's career—cost a quarter of a million. Captain De Groot made it, and it is said to have been paid for by admirers of the Commodore and of the work.

After Hudson, Central. The first of the twelve local lines, of which Central was made in 1853, was opened in 1831—no longer ago than that. In the early years of the war some of the road was double-tracked, business revived a little from the ante-bellum depression, and under peaceful—if not political—Albany management the consolidated line lumbered along. The Commodore missed his first dash at the control in 1866, Henry Keep going in as President. But Keep went in to secure temporary ends merely, and at the end of the year went out. Then the Commodore stepped up again, and how he entered in and took possession “so as not to leave a director within 150 miles of the track” is described as follows by a sorrowing Albany correspondent, writing just after the fact:

“The recent revolution in the Central Railway suggests the changing nature of earthly things. Only a short time ago the Pruyas, the Martins, the Pages and other leading men of the road were to be seen in the directors' rooms, but they passed away like a dream. Even Mr. Corning, the beloved manager, whose flat was law, is here no more, and another dynasty appears on the stage. The change was wrought by an agency of the most simple character, and one from which no such great end might have been expected. It was a slip of paper a few inches square, and containing a few lines of written characters. The circumstances were these: On the eleventh day of December a half-dozen gentlemen marched into the rooms of the company—rooms into which this was in some instances their first entrance. At 11:15 one of these gentlemen arose and dropped a piece of paper into the ballot-box, and presto! the change is wrought; an old empire passes away and a new empire is inaugurated. The appearance of the gentleman referred to was striking and impressive. He was of large size and finely proportioned, a splendid specimen of muscular and intellectual development, with an easy, bluff air, which suggested the quarter-deck, and with that peculiar homeliness which showed that he felt himself master of the situation. Such was the style of the last election of the ‘Central.’ At 11 o'clock the poll was opened, and remained open for five hours; for five weary hours the inspectors stood guard over the ballot-box, and during that time one vote was received. When the poll was closed the potency of the ballot was discovered. It bore the names of thirteen directors, and represented stock to the amount of \$18,000,000. Such was Commodore Vanderbilt's accession to the control of the Central. He came, bringing his directors with him, elected those directors, and then received through them the Presidency.”

Now he consolidated. Central and Hudson had a capital, together, of some \$36,000,000. The consolidation was on a basis of \$45,000,000. But the old roads had paid their dividends with borrowed money—lacking Vanderbilt. Some estimate of his railroad management may be gained from the fact that when this \$45,000,000 was soon doubled to \$90,000,000 the Commodore held it up to its old place in the market and paid bona fide dividends. There are several ways of “watering” stock. The Vanderbilt bronzes were unveiled November 11, 1869, with great pomp and poetry. The brokers had a burlesque ceremony at the Exchange, reformed in their customary head-long fashion. The orator's ambitious effort was cut short by the arrival of a burlesque Barnard injunction; letters were read from “broken houses,” regretting their inability to attend “on account of recent losses on Central,” and the Stock Exchange Glee Club sang an immortal ode, of which these three stanzas have been preserved:

Com' all ye jolly brokers, a story I'll relate
About a famous gentleman who lived in New York State,
Consolidated railroads were things he did not hate
As he went driving on,
His watering machinery as yet has never failed;
To show our lasting gratitude this statue's now unveiled;
Before Fisk, Gould & Company his courage has not failed
As he goes driving on.

This statue we set up for him, and may it last until
This very poor old gentleman can his breeches pockets fill.
And when he dies we'll surely find that with an earnest will
He'll still go driving on.

“This statue” was then divested of the shawl that covered it and showed a broker in a street with one hand across his breast and the other holding out a well-worn watering-pot bearing the figures “207”—the consolidation price of Central and the root of the matter. Finally the board sang with re-entring mind, “He is a pretty good fellow, which nobody can deny,” and so adjourned.

This new road had two rivals, Pennsylvania and Erie. The first was beyond the reach of the “great consolidator,” as Wall street was beginning complacently to call him. But he fell in love with Erie, to be, alas, disappointed. What he might have done with it had he got it may be imagined, but that was not to be. A rather colossal case of disappointment in love is the story of his suit and its failure, but not out of keeping. In the summer of 1867 he and his friends had got more than half the stock and proposed to elect a new board of directors with no Daniel Drew in it. That is, that was the original proposition, but Daniel wept so sorely at the prospect of being turned out homeless in his old age that the combination let him in and all his mischief with him. Of course there came a battle in the market and in the courts, Drew's method being to make enormous issues of new stock, and Vanderbilt's to buy it and enjoin him. How the war went over to Jersey and how the old man was beaten and humbled are matters too fresh to need to be recalled. A bill forbidding the consolidation of Erie and Central was put through the Albany Legislature. This legalized also the new stock issues and provided

for a broad-gauge connection of New York and Chicago. That ended the Vanderbilt love-suit. But the Commodore was pledged to hold up Erie, and vowed he would do it if it took all he had. For the first time in his life in the street he was suspected of insolvency. Some of his friends even deserted him and sold not only Erie but Central. Central went down. The Commodore shouldered it up from 108 to 111, and on the very day the Erie bill passed, when every man's hand was against him, to 120. Then Drew—“He never had backbone,” said the Commodore complacently—being old and an exile, and liable to arrest, gave in, and in the amicable settlement that followed Vanderbilt got rid of his Erie, and bid one dream farewell. A long lawsuit followed within a few months, brought by Fisk and Gould to recover some of the \$5,000,000 alleged to have been settled on the Commodore. It need form no part of this sketch, except that it brought all the notable people of the pool into court and made them talk about each other. Here it was that Dan'l Drew confessed his tucker-out. “Vanderbilt allus told me,” he testified, “that I acted very foolish in goin' over ter Jersey City. I told him I didn't know but I was placed in a very awkward light.” And so he surrendered. “Mr. Vanderbilt,” Jay Gould testified, “said Drew had very little nerve; that he'd known him from a boy; he called him a hypocrite.” Fisk testified: “Drew,” said he, “is a better puddin'.” One of the comical incidents of the trial was Fisk's description of a visit he and Gould paid the Commodore early in the morning. Vanderbilt wasn't up, and while Gould counseled a prudent delay, Fisk went up to the bedroom. “The Commodore was sitting on the side of the bed, with one shoe on and one off. He got up from the bed. I saw him putting on his shoe. I remember that shoe from its peculiarity; it had four buckles on it; I had never seen shoes with buckles in that manner before, and I thought that if this sort

everybody knows of them. These are the doubling of the Central track from Albany to Rochester, the sinking of the road-bed at Fourth avenue from the Grand Central Depot to Harlem River, and lastly, the opening of an immense establishment, in connection with stock and freight traffic, at Sixtieth street and North River. Before the building of the station at Forty-second street, where the out-bound trains from the northern section of the city then concentrated their passenger-travel, the trains made use of the surface of the Fourth avenue, wherever and however it suited their purpose. The Hudson River road was then using the old station at Thirtieth street and Tenth avenue. The switch laid from Spuyten Duyvil brought its travel, too, into the Grand Central, and the surface running, which had been already most annoying and fatal from the Harlem and New Haven trains, became unbearable when the Hudson River road began adding its share to the list of accidents. A cry went up for a change, and the Commodore, showing that the alteration was a public improvement with a private benefit, induced the Aldermen to promise to pay half the bills. Then began the long line of work under the general superintendence of Mr. Buckhout, since dead. No labor, expense or effort was spared to make the new roadway a substantial and satisfactory one, and to-day trains may fly through from Harlem River to the depot and vice versa, saving an amount of time over the old style.

The doubled track was a particularly pet project of the Commodore's. Long before work was begun, he had thought and talked of it. The saving to be made in running freight trains on a distinct set of tracks at a low rate of speed, and in no way interfering with or being interrupted by the fast-moving passenger trains, was the object of his longing for years, and now the 400 miles or more of extra tracks are almost all in place.

Some few years ago the Commodore acquired the title to twenty-odd acres of land on the East River front, running from Fifty-eighth street north, including water rights, &c. Upon this property large bulkheads have been built and enormous cattle-yards established, which have been for some time in active use. An immense grain-elevating store-house has just been completed on one of these bulkheads, between Fifty-eighth and Sixtieth streets. It is 354 feet long, 100 feet wide and 100 feet high; consists of two lower stories of brick, above which there will be a series of bins of 1,500,000 bushels.

RESOLUTIONS OF RESPECT.

A joint meeting of the directors of the New York Central & Hudson River, New York & Harlem Railroad, and Lake Shore & Michigan Southern railroad companies was held at Grand Central Depot, Jan. 4, Augustus Schell presiding. The object

of the meeting was stated to be an expression of regard for the memory of Cornelius Vanderbilt, the late President of the respective companies, and a committee, consisting of Samuel F. Barger, Chauncey M. Depew, William C. Wetmore, William H. Leonard and William L. Scott, presented the following, which was adopted:

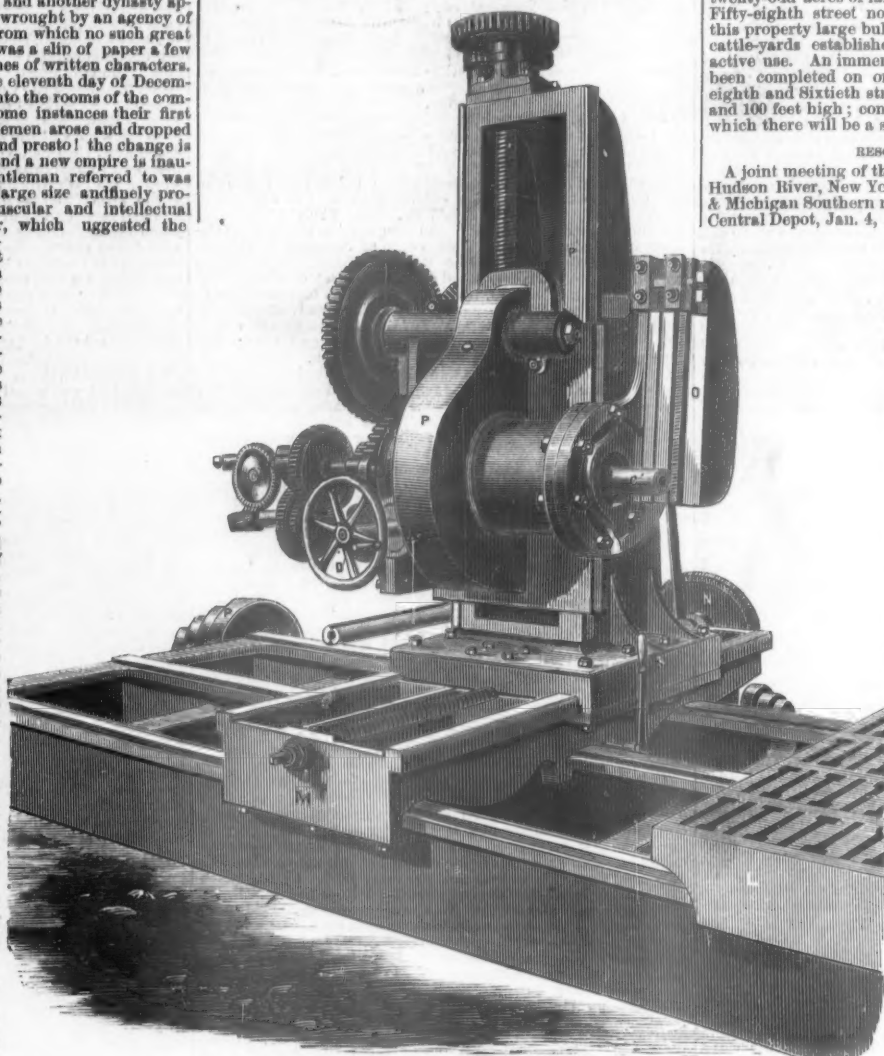
“The directors of the New York Central & Hudson River Railroad Company, the New York & Harlem Railroad Company and the Lake Shore & Michigan Southern Railway Company, assembled together by the sorrowful announcement of the death of their honored President, Cornelius Vanderbilt, direct that the following expression of their deep and lasting regard for his cherished memory be entered in full upon the minutes of their respective companies:

“Though the lamented dead passes away at an age beyond the allotted period of man, and at the close of a complete and rounded career, with his great work in the full course of successful and enduring operation, yet the sense of personal and public loss on the part of all his associates is none the less keen and poignant. The entire public will unite in paying the tribute of sincere respect for one who stood as the foremost representative of public enterprise and material progress; but to those who were identified with him in these boards his death comes with a closer and deeper touch. In their personal relations they lose a kindly and beloved friend; in their business relations one whose intrepid, penetrating, and sagacious leadership was the inspiration of unflinching success. While deploring the great loss thus sustained, it is a source of satisfaction to these boards to know, as it was a just solace to our departed friend to reflect, that the gigantic work he inaugurated and the sound policy he established find, in two generations of trained and worthy successors, the complete assurance that they will be faithfully and ably carried out by those who follow him in control. It is the mark of power to leave its impress beyond its own immediate

sway; and the truest monument to Cornelius Vanderbilt is the fact that he so organized his creation that the work will go on, though the master workman is gone.

“His career was a dazzling success. In an age and a country distinguished for their marvelous personal triumphs his achievements rank among the most extraordinary and distinctive of all. Thoroughly practical and faithfully wrought out, their splendor yet gives them the tinge of romance. Nor was this glittering success due to any early adventitious advantages. He was essentially the creator, not the creature, of the circumstances which he molded to his purposes. He was the architect of his own fortune. Beginning in a humble position, with apparently little scope of action and small promise of opportunity, he rose by his genius, his indomitable energy and his clear forecast, to the control of vast enterprises, involving millions of property and connected with the interests of millions of people.

“The diverse and complicated character of his business was as remarkable as its magnitude. He created a large merchant marine, and then turned with equal aptitude and skill to the organization and management of great railroad combinations. And it is to his lasting honor that his uniform policy was to protect, develop and improve the interests with which he was connected, instead of seeking a selfish and dishonorable profit through their detriment and sacrifice. The rights and the welfare of the smallest stockholder were as well guarded as his own. In a period of crafty devices for sinister ends he taught the way of success through legitimate means. It was a further evidence of his essential and rugged manhood that, with all his brilliant success, his frank simplicity of character and habits remained unchanged. In the height of his rare fortune he was the same direct, provident, uncontentious man as before he had mounted to his large opportunities. The sterling qualities of his strong and commanding individuality were deeply appreciated by all who were associated with him. He was firm



BORING, DRILLING, AND SURFACING MACHINE.

By Messrs. W. B. Bement & Son, Philadelphia.

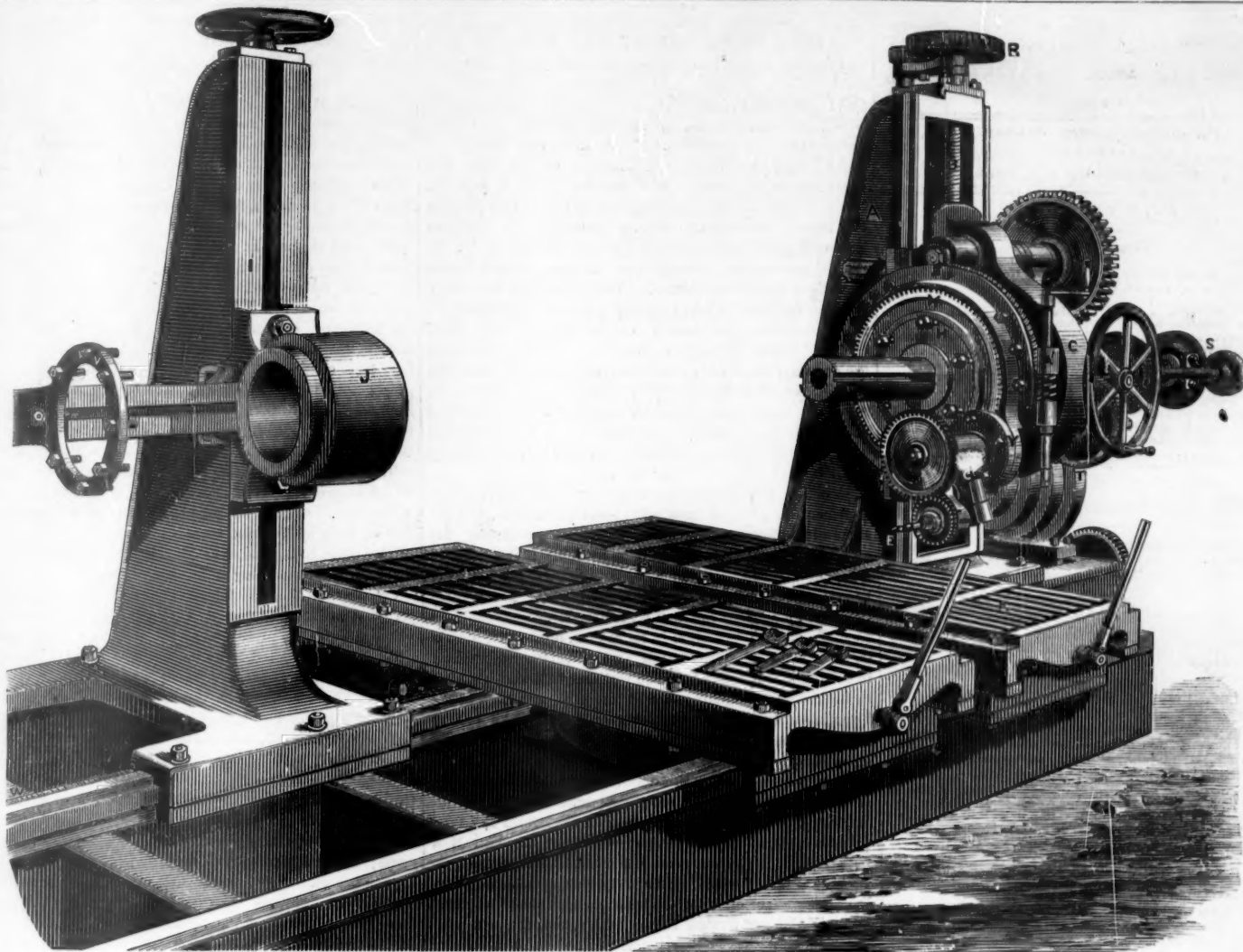
of men always wore that sort of shoes I might want a pair. * * * He said to me that I must take my position as I found it: that there I was, and that he would keep these bloodhounds (the lawyers) on our track; that he would be d—d if he didn't keep them after us if we didn't take the stock off his hands. I told him that if I had my way I'd be d—d if I'd take a share off; that he had brought the punishment upon himself, and that he deserved it. This entirely mellowed him down. * * * I said that he was a robber. * * * He said the suits would not be withdrawn till he was settled with. * * * I said (after the surrender) that it was an almighty robbery; that we had sold ourselves to the devil; Gould felt the same as I did.”

So the Commodore gathered them in. This suit was his farewell to Erie forever. It is said that he has thrice since been offered its control by English shareholders, but has steadily refused to renew the bond. It was pretty much his farewell, too, to Gould. He had no other business dealings with him, and some years afterward wrote to the *World*: “I have had nothing to do with him in any way whatever (with one exception), nor do I ever mean to have, unless it be to defend myself. I have, besides, always advised my friends to have nothing to do with him in any business transaction. I came to this conclusion after taking particular notice of his countenance.”

After Erie, Lake Shore. The Commodore bought in and kept it, and through the panic of Black Friday, in 1869, and the collapse of September, 1873, held it with Central up straight by main force, no matter what else tumbled. Since 1873 the fight has been a steady one, renewing its fierceness from month to month. Of late, it is understood, he had relieved himself of much of the burden, and having trained the hands of his son, Wm. H. Vanderbilt, to war, and his fingers to fight in the old fashion, was content to leave the battle to him.

HIS RECENT ENTERPRISES.

Three of his recent enterprises may be briefly noted, though



BORING, DRILLING AND SURFACING MACHINE.

By Messrs. W. B. Bement & Son, Engineers, Philadelphia.

and true in his friendships, and the unerring sagacity with which he selected the best agents to administer his great trusts was only equalled by the sincerity of his attachment for those who proved worthy of his confidence. In his relations with the members of these boards he was uniformly courteous and genial, and the association will ever be a fragrant memory.

"As a citizen he was true to the honor and welfare of his country. His public spirit was attested by his liberal donation to the Government, in the hour of its need, of the steamer bearing his own name—a contribution which, in a critical emergency, when there was urgent demand for the promptest naval equipment, was even more important than its intrinsic value, great as that was. If his patriotism was thus substantial, his philanthropy was equally generous and effective. Without ostentatious profession he wrought practical good. His own training had been in the severe experience of affairs, rather than in the fine culture of the schools; but his nature was great enough to appreciate advantages of the finished education he had not himself been permitted to enjoy, and his magnificent gift for the endowment of the university at Nashville will be gratefully remembered by the large number who will share its benefits. While exacting needed and effective discipline among those intrusted with the care of property and lives of the people, he always manifested a strong attachment for them and a kindly interest in their welfare. It was among his cherished purposes that adequate provision should be made, upon some comprehensive plan, for injured and needy railroad employees, and even while suffering under fatal disease his thoughts and utterances often recurred to those asso-

ciated, in every variety of capacity, with his great enterprises, and evinced his earnest regard for their prosperity.

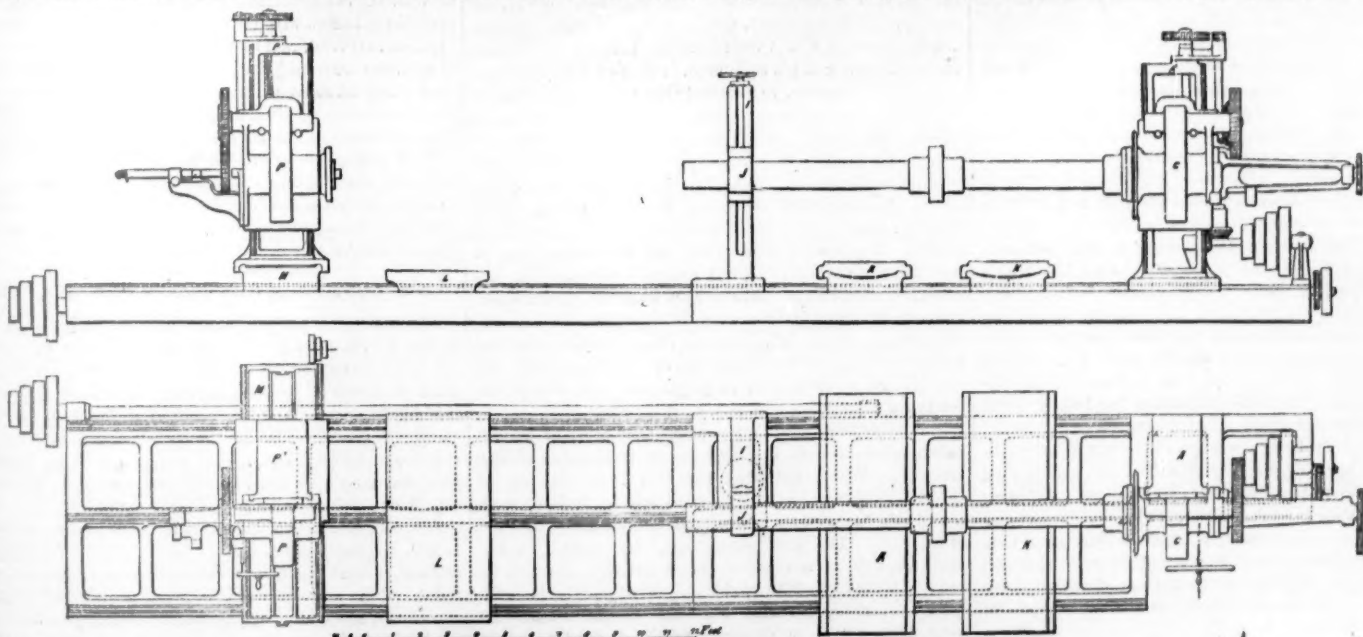
"He was peculiarly happy in his domestic relations. Passing beyond the golden anniversary with the cherished companion of his early manhood, whose memory was deeply revered by her survivor and by her children, he was fortunate in the choice of his later life; and his declining years were sustained and brightened by the tender devotion of one whose rare endowments of heart and mind shone throughout their union, who ministered with unaffected grace to his comfort and happiness, and to whom, with the other members of his family, we extend our sincere sympathy in their bereavement. He endured a protracted and painful illness at a remarkable age with heroic fortitude and Christian spirit; and when the sun of his life, unclouded through its long day, peacefully sank below the horizon, a true man, a sincere friend, a devoted husband and father, a liberal employer, an extraordinary genius of affairs, and a citizen of high public spirit, went to his final rest."

Bement's Boring and Drilling Machine.

The engravings and the following description of this machine, built by Messrs. Wm. B. Bement & Son, of Philadelphia, are copied from *Engineering*, of Sept. 29, 1876.

It is adapted for boring cylinders of large dimensions, for drilling the bolt holes in their flanges, and for surfacing the latter. The bed of the machine is 39 ft. long, and it carries at one end a fixed standard A, which supports the gearing and

boring bars. The latter is carried in the hollow spindle D, which slides through the spur-wheel A, and is driven through the stepped pulleys T. By means of the geared wheels B and the screw E, the bracket carrying the whole of the boring motion can be raised or lowered. By a special set of gearing the bolt holes can be drilled in the cylinder flanges without removing the work. This is effected by means of the worm-wheel Z, which is turned by hand through the worm A', and carries with the frame in which are set the pinion Y gearing with A, the spur-wheel F, and the small pinion carrying the drill L. The drill thus can be brought to bear at any desired point of the flanges, and by causing the pinion on the spindle carrying the drill to turn around the spur-wheel F, it can be adapted to cylinders of different diameters. The form and arrangement of tables K, to which the work is secured, are shown in the perspective views and in the general plan. The standard I carries the bracket for holding the boring bar bearing, as shown in the perspective view; a number of these bearings and bushes are provided with the machine to suit different-sized boring bars. The height of these bearings can be adjusted by means of the screw and gearing, as shown. The standard J rests upon the central ribs of the frame, and is traversed by a screw. The third standard is used for surfacing work, and has a two-fold motion imparted to it, transversely by the screw M and longitudinally by means of the traversing screw of the machine driven by the pulley P. The bracket carrying the moving parts can likewise be raised and lowered by a vertical screw, and the cutting tool is mounted in the bracket D, and revolves around the spindle C, driven by gearing as shown.



ELEVATION AND PLAN OF BORING, DRILLING AND SURFACING MACHINE.



Published Every Friday.

CONDUCTED BY

S. WRIGHT DUNNING AND M. H. FORNEY.

CONTENTS:

Page.	Page.
ILLUSTRATIONS:	GENERAL RAILROAD NEWS:
Boring, Drilling and Surfac-	The Scrap Heap..... 19
ing Machine..... 14, 15	Old and New Roads..... 19
EDITORIALS:	ANNUAL REPORTS:
Cornelius Vanderbilt..... 16	Philadelphia & Reading..... 21
The Cost of Steel Car-Wheel	Pittsburg..... 22
Service..... 16	New York, New Haven &
The Grain Movement for 36	Hartford..... 22
Weeks..... 17	MISCELLANEOUS:
Record of New Railroad Con-	The Career of Cornelius Van-
struction..... 17	derbilt..... 13
EDITORIAL NOTES..... 18	The Late Governor of Illi-
GENERAL RAILROAD NEWS:	nois on Railroad Legisla-
Transportation in Congress..... 18	tion..... 18
Elections and Appointments..... 18	The Western Railroad Asso-
Personal..... 19	ciation..... 18
Traffic and Earnings..... 19	

Editorial Announcements.

Passes.—All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.

Addresses.—Business letters should be addressed and drafts made payable to THE RAILROAD GAZETTE. Communications for the attention of the Editors should be addressed EDITOR RAILROAD GAZETTE.

Advertisements.—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns our own opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

Contributions.—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

CORNELIUS VANDERBILT.

With the death of Cornelius Vanderbilt last Thursday, the most striking figure in the American railroad world disappears. Engaging in railroad business only recently, as we may say (for he did not become a manager until 1862), his accession marked an era in the history of American railroads. His early career as a railroad manager was distinguished by a series of bold, startling, revolutionary measures which attracted universal attention, and had an effect reaching far beyond the lines and companies with which he dealt directly. The Vanderbilt era was the first great era of consolidations. That it was created by Vanderbilt would be too much to say; but he was the first great actor in it, and apparently hastened its coming. Apparently, he had carried this policy as far as he cared to: the comparatively recent acquisition of the Canada Southern seems to have been not so much in pursuance of a long-cherished design as the taking advantage of favorable circumstances to strengthen a position and provide for future contingencies. Still, the late Mr. Vanderbilt was emphatically a man who kept his own counsel, and we cannot affirm that the railroad system which he left was as complete as he designed it.

As this man's work is finished, it is natural for us to ask, what gave him his exceptional position and power as a railroad man. Was he a great man, and if so, what made him great? Though there will be many to find fault with this thing and that in his policy, to charge him with a lack of appreciation of this or that feature of railroad business, yet few who dealt with him will hesitate to call him a great man, a masterful mind, a tremendous force, whose career was his own creation, not the result of a series of happy accidents.

It is sometimes said that Commodore Vanderbilt could not be expected to conduct railroad business intelligently, because he did not enter upon it until he was nearly seventy years of age, had no experience as an engineer or with any of the details of railroad construction, machinery or operation, and, indeed, had very little education of any kind; and there is an impression somewhat prevalent that the Vanderbilt management was a sort of main-strength management; and that its success was due chiefly to tremendous will and abundant resources, and not much to knowledge and skill.

But those who thus assume that Commodore Vanderbilt

had no preparation for the work which engaged his last years and in which he made the greater part of his fame and fortune regard railroad business too much as exclusively a thing of tracks, and rolling stock, and apparatus and the running of trains; they see only the appliances by which the work is done, and neglect the work itself—the business of transportation. Now, Cornelius Vanderbilt had a longer experience as a common carrier than any other man of our time. For sixty-six years it was his business and his sole business, and nearly all that time he had been at the head of whatever transportation business he was engaged in, beginning when, at the age of 16, he carried passengers and freight in his own boat between New York and Staten Island. When he first became a railroad manager he had had fifty years of experience in this business, and much of the time at the head of the most important business of the kind in the country, engaged in carrying between New York and Europe and New York and San Francisco, as well as on the most frequented domestic routes. When he turned his attention to railroad business, he had at least this great qualification for conducting it, that he was perfectly familiar with the work to be done.

So when Mr. Vanderbilt began to work the Harlem Railroad he at least knew what results to aim at, and the thousand influences which attract and divert traffic. He certainly lacked much which it is desirable that a railroad manager should know; but so do many managers who have been employed on railroads all their lives. For it must be remembered that the men on railroads are educated in specialties, and not often in more than one. One man is an expert in road construction and maintenance, another in rolling stock, another in the working of trains, another in the conduct of business; and the man promoted to the direction of the whole business is fortunate if he has an adequate comprehension of the importance of more than one department, not to say familiarity with the details.

The whole career of Commodore Vanderbilt was in the midst of a strenuous and often desperate competition for traffic. When at the age of sixteen he offered his sail-boat with seats for twenty passengers as a conveyance on New York Bay, there were several other sail-boats competing for the business; while still a very young man he had a prominent place on what was then perhaps the most traveled route in the United States, where, too, the competition became fierce; he ran steamboats on the Hudson at a time when the competition exceeded anything ever known in the business of transportation, perhaps; and though he did much to lessen the competition in a large district served by his railroads, still during the last year of his life a very large part of their traffic was competed for until the rates became the lowest ever known in railroad business. His whole career was the successful prosecution of transportation business subject to fierce competition—a condition of things such as does not exist to anything like the same extent in the railroad business of any other country. To this peculiar condition he seemed perfectly suited, and his experience tended to exclude belief in the possibility of any other condition of things. Perhaps he would have done better in later years had he trusted more to combination, though this is a question not easy to decide. It will be a misfortune for combination to come before its time, and the terms and the mode will probably first have to be determined through competition.

Doubtless the strength of the man was in his character, and was largely if not chiefly moral. He was counted clear-headed and shrewd, but it is doubtful whether these intellectual qualities would have brought him distinction but for his tremendous will, his resistless energy, his courage and perseverance. He pursued his purposes with a determination which would not be balked; he devoted the whole power at his command, which of late years was something enormous, to accomplishing them; he did his work with the same tremendous energy with which great soldiers fight battles, straining every nerve to carry his point, and making ventures which seemed bold to the verge of recklessness. Indeed he had many of the qualities of a great general—coolness, decision, energy, will, courage, in a measure which few great soldiers have surpassed. The leading aims in his administration seem to have been few and simple, but pursued with a vigor not often met with except where men are doing their own work. Industry and faithfulness were indispensable in his subordinates. He would endure no man who did not attend to his business, and was impatient of any office which did not give its occupant full employment. He looked directly for results.

It is sometimes said that a prominent fault of uneducated, self-made men is a tendency to undervalue ability and skill. We do not think that this is entirely true, if the self-made man has really a good mind. Indeed, such a man often overvalues exceptional ability, and trusts too much to it. The uneducated man, especially if he has made his way in a career of great activity, in which he has had little to do with plodding investigations, is more likely to err by ignoring the value of the intellectual work done by more ordinary minds, trained to work with facility and accuracy, but not capable, perhaps,

of very brilliant results. The fact is, that in any great and complex business quality will not make up for quantity of brains any more than quantity will make up for quality. The greatest ability is more valuable there than elsewhere, it is true, and may be made immensely productive; but you cannot secure perfect success simply by getting the ablest men as heads of departments. These latter need the help of other brains, and of plenty of them. With such help they can accomplish wonderful things; but with a scanty staff of assistants they are constantly forced to sacrifice their time on work which less valuable men could do just as well. It does not pay to have a book-keeper run errands, and it is still more wasteful to give your railroad officer at a hundred dollars the week the work which could be done by an assistant engineer, an inspector, or clerk at twenty dollars a week. It is the collection of information not naturally acquired in the course of business that the uneducated, strong-willed and strong-minded man is usually slow to appreciate and to provide for. The most capable officers often have their usefulness greatly limited for the lack of this kind of help, and it is nowhere more needed than in railroad business, which is comparatively new and in which improvements of material and processes are made constantly. A railroad man cannot learn his profession and be done with it; he must be learning it all the time, or else cease to be master of it. If he stands still, his business will grow away from him.

Commodore Vanderbilt in his boating days was famous for good work; his lines were usually the best ones, best equipped, fastest, promptest. He was not an engineer, except as he learned to be one while running his vessels; but he must have become a good judge of ship engineering, for his vessels, very many of them built to his order, were among the best afloat, and were noted as such. In this occupation, too, where the staunchness of the vessel and the skill with which it is sailed are among the chief elements of success, he was remarkably successful. If this had been with one or two vessels, it might have been attributable to good fortune; but with a great fleet, such as he had for many years, only good construction and good seamanship will account for the high average success. The ambition to have the best appliances followed him into his railroad career. His lines were among the first to be laid with steel rails; he laid more separate freight tracks than there are in all the world beside, perhaps; the old structures were not thrown away, but when requiring renewal they were largely replaced by the solidest and most capacious structures. Such works as the Grand Central Depot, the Fourth Avenue Improvement and the new grain elevator are among the most notable structures of the day.

In one respect Mr. Vanderbilt's work is unique. He not only formed a great railroad system, but he transmitted its management. Having acquired the immense wealth requisite to secure a controlling interest in the great property which he managed, he was able not only to keep the management undisturbed during his life but to secure its permanence after his death. This stability of control has been one of the strongest features of the Vanderbilt companies, and would have been still more effective if two of the rival trunk lines were not, though not for similar reasons, also kept steadily in the same hands. It is not impossible, however, that the stockholders of the Pennsylvania or the Baltimore & Ohio companies may some time vote in a new management. But when the managers of the New York Central are voted out it must be by their own votes, as all the railroad shares in the Vanderbilt estate, with the exception of 2,000, are left to Wm. H. Vanderbilt and his sons. It seems thus almost certain that there will be no revolutions in the management of this road, and that it will remain substantially as it has been for a long time to come. The railroad business is left much as an individual's business might be, and indeed the Vanderbilt railroads were to a greater extent than any other of similar extent an individual property.

It is not given to every man to bear the load which was easy for Cornelius Vanderbilt. But his work was mostly done years ago, and has not to be done over again. What he created, in a manner, remains to be administered. This is the great work left to his successor.

THE COST OF STEEL CAR-WHEEL SERVICE.

The improvements which have been made in the manufacture of steel during the past ten or twenty years, and the great reduction in its cost still later, have presented some problems to railroad engineers which are somewhat difficult to solve, chiefly on account of the want of sufficient data regarding the service which will be rendered by the new material. When steel was first used for locomotive driving-wheel tires, it required a number of years' experience before its superiority over wrought iron was sufficiently recognized to induce locomotive superintendents to use the former, and at first all sorts of imaginary difficulties were urged against the adoption of the new material. Even now some old-fashioned locomotive runners and master mechanics may be found who still persist in believing that a locomotive will not pull as much with steel tires as it would with wrought iron. On the Baltimore &

Ohio Railroad within the last ten years cast-iron locomotive tires were used exclusively, and the authorities on that line were prepared to show by data and figures that the cast-iron tires were very much cheaper and less liable to breakage than wrought iron. When, however, the latter was substituted for steel, the same parties who advocated the use of cast iron for tires—and with much good reason, too—admitted at once that the question of the latter material versus steel was a very different one from that of the comparative advantages of cast and wrought iron, and as soon as the price of steel began to be reduced, the Master of Machinery of the line referred to began to substitute steel tires for those of cast iron, and he has ever since then continued that practice. Quite curiously, however, while on other roads the use of steel tires for locomotive driving-wheels was adopted earlier than on the Baltimore & Ohio Railroad, their use has in most cases been confined to the driving-wheels, whereas on the line referred to the authorities have gone a step farther and are now using steel-tired truck wheels very extensively. The tires of these wheels are fitted to the latter on a tapered, or, more correctly, a conical seat, are put on cold and are held in position by hook-head bolts. An engraving of these wheels was published in the *Railroad Gazette* of July 7, 1875. As the subject of the cost of car-wheel mileage has recently been discussed at the monthly meeting of the Car-Builders' Association, and as a good deal of interest has been manifested in it elsewhere, we applied to Mr. Davis, Master of Machinery of the Baltimore & Ohio Railroad, for a statement of the cost and service of the engine truck wheels used on the road with which he is connected. In reply he stated that the cost of their 30-in. steel tired engine truck wheels was as follows:

Cast-iron centre, bored and turned.....	\$12 68
Steel tire, bored and drilled.....	42 50
Bolts, nuts and fitting.....	1 06
	\$56 16
Cost of turning up one pair of tires.....	\$2 52
Average mileage before requiring turning, 37,000 miles.	

He also adds that "it is impossible to say how many turnings they will bear, as I have never arrived at that point."

It has also been stated that tires put on the wheels with a tapered fit were liable to accident from the breakage of the bolts caused by the wheel flanges striking the guard rails, in which case the outward strain must be resisted by the bolts, which are therefore often broken, or the tire works loose. To this Mr. Davis replied that he had "never heard of any trouble caused by bolts breaking or tires coming loose." As the mileage of locomotives is usually kept with greater care than that of cars, this experience of the Baltimore & Ohio Railroad will give us some excellent data from which to estimate the relative cost of cast-iron wheels with chilled tread and those with steel tires, although the experience with the latter is not yet final, owing to the fact that none of them are thus far worn out, and it is therefore impossible to tell how much their total mileage will be. If, however, we take the service of cast-iron wheels and estimate its cost, we can deduce from that how far the steel wheels must run to be equally as cheap.

The cost of a 30-in. chilled cast-iron engine truck wheel is now about \$12.50. The cost of boring, fitting and putting a wheel on an axle, including that of taking off the old wheel, is about \$2.00, at least that is the charge authorized at the meeting of superintendents and master car-builders held in Chicago a few weeks ago. Taking the average mileage of engines at 80 miles per day, and the average service of their truck wheels at 40,000 miles, it would take 500 days to wear out a wheel. The value of old wheels is now about \$22 per ton of 2,000 lbs., and the weight of 30-in. engine truck wheels about 500 lbs., so that our account would be as follows:

Cost of wheel.....	\$12 50
" boring and fitting.....	2 00
	14 50
Interest at 7 per cent. on this sum for 500 days.....	1 40
	15 90
Credit, value of old wheel removed.....	5 50
	\$10 40

The cost of the service of the wheel is thus 26 cents per thousand miles.

As the total service which the steel-tired wheels will perform is not known, at least from experience in this country, and on our roads and under our rolling stock, it is impossible to make a calculation similar to the above to show what the cost of their service will be. We can, however, assume different mileages, and determine what the cost of that amount of service would be, and thus learn how far they must run in order to be as cheap as the service of chilled cast-iron wheels.

Thus supposing that the wheel centre and tire are both worn out after running the first 37,000 miles, then the cost would be as follows:

Cost of wheel complete.....	\$56 16
Interest on cost for 462 days.....	4 98
	\$61 14

The tires will weigh when new about 350 lbs., and the

wheel centre about the same. At present there cannot be said to be any market for worn-out tires, but it may be assumed that they will be worth as much as old wheels. Then if, when the tire is so worn out, it has lost half its weight, there would be a credit of 175 lbs. of old tire and 350 lbs. of wheel centre, or 525 lbs. in all, at \$22 per ton, which would amount to \$5.77, which, deducted from \$61.14, leaves \$55.37 as the cost of 37,000 miles of service, or \$1.49½ per thousand miles. If, however, the tire is not worn out after running 37,000 miles, but is then turned off and runs 37,000 miles more, then our calculation will be as follows:

Cost of wheel complete.....	\$56 16
Interest on cost for 462 days before turning.....	4 98
Cost of turning off.....	1 26
Interest on \$57.42 for 462 days after turning.....	5 09
	\$67 49
Credit, old wheel and tire.....	5 77
	\$61 72

This is equal to 83½ cents per thousand miles. With this method of calculation, the following table has been worked out to show the cost of the mileage after each successive turning—the wheel being supposed to run 37,000 miles each time, and interest being calculated on the cost of wheel and turning, but not on accrued interest.

Number of miles of service of wheels.	Total cost of service of wheel.	Cost per thousand miles of wheel service if they run 80 miles per day.	Cost per thousand miles of wheel service if they run 160 miles per day.
37,000.....	\$56 37	\$1 49½	\$1 42½
74,000.....	61 72	83½	79½
111,000.....	68 18	61½	59½
148,000.....	74 75	50½	48½
185,000.....	81 43	44	42½
222,000.....	88 22	39½	38½
259,000.....	95 12	36½	35½
296,000.....	102 13	34½	33½
333,000.....	109 26	32½	31½
370,000.....	116 48	31½	30½
407,000.....	123 82	30½	29½
444,000.....	131 27	29½	28½
481,000.....	138 83	28½	28½
518,000.....	146 50	28½	27½
555,000.....	154 28	27½	27½
592,000.....	162 17	27½	26½
629,000.....	170 17	27	26½
666,000.....	178 28	26½	26½
703,000.....	186 50	26½	26
740,000.....	194 83	26½	26½
777,000.....	203 27	26½	26½
814,000.....	211 82	26	25½

From the data given by Mr. Davis, and from the third column of the table calculated therefrom, it will be seen that in order that the service of steel-tired wheels be as cheap as that of chilled cast-iron wheels the former must run over 800,000 miles—a service which it would be very sanguine to expect. The calculations are based upon the data received; of course any change in the latter, such as a reduced price of steel wheels, greater mileage of the latter to one turning, or, if it can be shown, that chilled cast-iron wheels will not run 40,000 miles—or in fact if any of the data from which the calculations have been made are shown to be incorrect, it may change the result; but if the figures given are right, the result as shown in the table will follow.

In making the calculation only simple interest was reckoned, but interest on the cost of each successive turning was added. Persons who have not made such estimates have very little idea how important an item the interest charge becomes. For the last 37,000 miles represented in the table, it is \$7.29, or 19½ cts. per thousand miles of service. If, therefore, the average distance run per day was doubled, so as to be 160 miles, which would be about the average mileage of passenger cars, it may be supposed that quite different results would follow, because the interest would then be only half as much. In that case the cost per thousand miles of service of the chilled wheel would be only 24½ cents, and that of the steel-tired wheel has been calculated on that basis, and is shown in the last column of the table. From the latter it will be seen that even though the steel tires should run 800,000 miles, they would still not be so cheap as cast-iron wheels. The result, too, is quite curious. The additional cost for the last 37,000 miles of service, after running 777,000 miles, would be, according to the calculations, only \$1.26 for turning up and \$3.61 interest, or a total of \$4.90, which would be only 13½ cents per thousand miles; but if we distribute this cost through the total, the whole average is 25½ cents.

Then, too, even if the wheel ran an average of 160 miles every day, it would take nearly fourteen years to wear it out. It would, therefore, be entirely right and proper to charge compound interest year by year, in order to arrive at the true cost of such wheel service. If this were done, it would make the service of steel-tired wheels cost very much more than chilled wheels.

Then, too, there is another consideration: in the calculations it was assumed that the wheel centre and the tire would be worn out simultaneously. Now if a cast iron wheel centre is used, it is not at all certain that this will occur, and if the tire should make any such mileage as the higher figures in the table indicate, it seems very probable that the tire would require several new centres instead of the centre wearing out several new tires. The life of the wheel centre is, in fact, an element which is quite as important to take into consideration as that of the tire itself.

On the whole, our calculations, which were commenced with the impression that they would show that steel-tired wheels would be the most economical, lead us to conclude that unless some more favorable showing can be made than is indicated by the data we have employed in these calculations, cast-iron wheels are, at present at least, much cheaper than those with steel tires. Of course if the experience on any of our railroads should indicate a greater service for steel wheels, or manufacturers supply them at less price, the conclusions arrived at must be modified, but with the present light on the subject he chilled cast-iron wheels are ahead.

The Grain Movement for Thirty-six Weeks

The shipments of grain of all kinds for the 36 weeks ending with Dec. 30, have been, in bushels:

	By lake.	By rail.	Total.	Per cent.
Heretofore reported.....	67,428,425	88,066,370	155,494,795	46½
Week ending Dec. 30.....	964,795	964,795	964,795	100
Total for 36 weeks.....	67,428,425	89,031,165	156,459,590	46½

The receipts for the week are the smallest since the close of navigation and perhaps the smallest of the year.

For the same 36 weeks the receipts of the different Atlantic ports have been:

	Corn.	Per cent. of total.	All grains.	Per cent. of total.
New York.....	22,532,615	34.0	61,093,185	47.4
Boston.....	7,184,794	10.8	10,321,069	7.9
Portland.....	638,070	0.9	1,105,927	0.8
Montreal.....	3,494,261	5.3	11,409,927	8.8
Philadelphia.....	14,967,625	22.6	23,051,735	17.7
Baltimore.....	16,213,700	23.9	19,246,585	14.8
New Orleans.....	2,847,692	3.5	3,454,129	2.6
Total.....	66,379,383	100.0	130,179,680	100.0

The chief changes in rank as corn receivers, as compared with the previous week are a considerable decline at New York and a considerable advance at Baltimore, the latter apparently taking the position it held last winter as the leading corn receiver at this season of the year. In grain of all kinds both Philadelphia and Baltimore gained and New York lost.

Of the total corn receipts of the last week, 44 per cent. went to Baltimore, 27 per cent. to Philadelphia, 17 per cent. to New York and 11 per cent. to Boston. Of the receipts of all grains 31½ per cent. went to Baltimore, 29 to New York, 24 to Philadelphia and 10 per cent. to Boston.

Record of New Railroad Construction.

This number of the *Railroad Gazette* has information of the laying of track on new railroads as follows:

Fitchburg.—During last year this company constructed a new road 1.36 miles long to improve its line.

Columbia & Port Deposit.—Extended from Phyle's Ferry, Pa., southeast to one-half mile east of Peach Bottom, 4 miles, and from the Philadelphia & Baltimore Central crossing northwest to one mile west of Conowingo, 4 miles.

East Berlin Branch.—The first track is laid from Red Hill, Pa., northward to Abbottstown, 3 miles.

Duck River Valley.—The first track is laid, from Columbia, Tenn., southwestward 6 miles. It is of 3 ft. gauge.

Springfield, Jackson & Pomeroy.—The first track is laid from Jackson, O., west two miles. It is of 3 ft. gauge.

Waterville & Washington.—Extended westward 11 miles to Washington, Kan.

This is a total of 31½ miles of new railroad. This, with the corrections made in mileages reported heretofore, makes the total completed in the United States in 1876 amount to 2,351 miles of railroad, against 1,560 miles reported for the corresponding period in 1875. 2,025 in 1874, 3,883 in 1873, and 7,340 in 1872.

COMMODORE VANDERBILT'S WILL, as drawn up just two years ago, left all his railroad shares—every security which carries a vote—to his eldest son, the residuary legatees, the bequests to other heirs being in bonds or other property. These other bequests amounted to about \$4,650,000, besides his house and some other property not in the form of securities. This left no clue as to the amount of his holdings in the stocks of the "Vanderbilt roads," which were supposed to include a majority of the \$90,000,000 of New York Central & Hudson River and of the \$9,000,000 of the New York & Harlem, and a very large part, if not a majority, of the \$50,000,000 of the Lake Shore & Michigan Southern, the whole fortune being estimated at from \$75,000,000 to \$100,000,000. By a codicil dated six months later, he disposed of \$2,239,600 of Harlem shares and \$9,365,000 of New York Central, but all, except \$200,000 of the latter, which went to his wife, was left to Wm. H. Vanderbilt's sons, so that the entire control exercised by the Commodore is now in the hands of his son's family. It had been generally believed that the stock, or enough of it to control the companies, would be left in trust, the heirs being given absolutely only the income from it, thus absolutely preventing the disposal of the stock and a consequent possible change in the control and management. But the will gives the property in fee, and nothing in it prevents his sons and grandsons from selling their shares if they see fit. If his estate included a majority of the shares of the three companies which he managed, he must have had at least \$45,000,000 of the New York Central & Hudson River (worth now about 101½), more than \$4,500,000 of the New York & Harlem (worth 136), and more than \$25,000,000 of the Lake Shore & Michigan Southern (worth about 55). The value of all these at present prices would be about \$65,500,000. This represents only a bare majority. The income from these securities last year was \$4,862,500. The fact that an income something like this goes to a single family must be borne in mind in estimating the strength of the companies to resist adverse circumstances, whether arising from competition or

otherwise. The dividends of the Vanderbilt roads can be reduced nine-tenths without affecting the comfort of those who hold a majority of the shares. This cannot be said of any other railroad property, probably. The majority of most dividend-paying shares is held by those who depend upon them partly for their support.

THE TEXAS & PACIFIC is reported to have made terms with the Southern Pacific, and the latter will no longer oppose the granting of Government aid to the former, a new bill for which is to be brought in directly, it is said. The terms of the agreement are not made known definitely, but they doubtless provide that there shall be but one railroad built between the Colorado River and the Pacific, and probably that the Texas Pacific shall have running rights, or other privilege of use, of the line of the Southern Pacific over this district. It certainly would have been a wicked waste to build two railroads through this territory, only a small part of which is likely ever to furnish any local traffic to a railroad, while that part is already mostly provided for by the lines of the Southern Pacific. The latter may insist on continuing its line across the Colorado to or towards the Arizona mines, which are likely to afford a profitable, and some time perhaps a considerable traffic. With the junction point opposite these mines, the Texas & Pacific and the Southern Pacific would be situated much like the Central Pacific and the Union Pacific, at Salt Lake, joining in a district where both could compete for a considerable traffic, one offering to supply the district from the West and the other from the East. What assistance will be asked for the Texas & Pacific is not stated; probably the same Government guarantee per mile as proposed last year, but extending only to the Colorado at furthest, instead of to the Pacific. It is thought that there is a fair chance of getting the bill through.

THE READING REPORT, a summary of which is published elsewhere, shows a decrease of 18 per cent. in the net profits of the year, which fell below the fixed charges (interest, rentals, etc.) by \$1,350,000. There was the very large increase of 30 1/2 per cent. in passenger earnings, due to Centennial traffic, and a decrease of 12 1/2 per cent. in coal earnings. There was an increase in working expenses, due probably chiefly to the increase in passenger traffic, as there is a decrease in the expenses per passenger and per ton of coal moved. The report says that, in spite of the fall in prices after the breaking of the coal combination, amounting to about \$1.75 per ton, the profits of the railroad were more than twice as great for the three months following that event than for the three months preceding, and the profits of the railroad and the coal and iron company together are given as \$1,932,000 for the three fall months, against \$125,000 for the three summer months. Mr. Gowen says that the results since the fall in prices indicate that even with the present condition of things the company can earn enough to pay all its fixed charges. The great danger of the company is in the floating debt of more than \$8,000,000 which it has to meet, and to provide for which a new mortgage is to be made.

RAILROAD CAR STOVES are denounced as the cause of the fire which increased the horrors of the Ashtabula accident. But the passenger cars on this train were heated by hot water; and instead of oil lamp candles were used for light, the appliances being supposed to be those least likely to cause fire. But there must be a fire somewhere to heat water in pipes, and when a car falls 70 feet or so, almost any receptacle for fire will be shattered and the coals scattered. Moreover, when a locomotive falls bottom up on a heap of broken cars, a fire may be kindled without stoves. Doubtless in this case, while the failure of the bridge was the first cause of the accident, the burning of the cars, which was another and distinct occurrence, added to the fatality. Heating and lighting apparatus which will not be likely to communicate fire in case of accident are very desirable; but it is doubtful whether any such apparatus would have been effective at Ashtabula. When all the heaters in a train have been crushed by a fall of 70 feet, and their contents mingled with the splinters of the cars, those of the locomotive fire-box being poured over them in addition, nothing but incandescence in the cars themselves is likely to prevent a conflagration. What might be perfectly effective in an ordinary derailment or collision might be useless in such a tremendous fall.

THE WINTER is proving a trying one to railroads north of the latitude of New York. The snow has been very deep for some weeks, and no sooner is the track tolerably cleared than another great storm comes, and everything is blocked again. The result is a small amount of work done at unusual expense and with very great labor and suffering on the part of the railroad employees. Trains are delayed, men have to remain on duty hours over their regular time, and all the confusion consequent upon irregularity follows, including an unusual number of accidents, which are always very numerous in snowy months, though usually not very serious in their effects. Now the "starved" railroad comes to grief. Road and rolling stock need to be in the very best condition to endure such a season as this. If they were in bad order when the winter began, they will be in a sad plight when it breaks up.

RAILROAD CONSTRUCTION IN 1876 was fairly active. We have nearly completed our annual record, which will appear next week, and have figured up a total of 2,351 miles, which will probably be somewhat increased when our information is all in. This is 52 per cent. more than in 1875 and 16 per cent. more than in 1874. It adds about 3 per cent. to the mileage of the country, bringing it up to 76,560 miles. This gives a mile of road to just about 600 inhabitants.

THE ADVANCED RATES seem to work very well so far, but we cannot learn that any claims for drawbacks on grain exported from New York have been made yet, there having hardly been time for exports of grain received under the new tariffs.

Apparently, the managers of the trunk lines do not yet agree as to what they meant by the agreement which they made, and it is not improbable that troubles may arise when drawbacks come to be paid. However, no one seems inclined to make any trouble now, even though things are not done to suit him: all are only too glad to have a chance to earn a little money—and a hard time they are having in earning it during this weather.

The Western Railroad Association.

The following circular has been sent to companies not members by the Secretary, Mr. J. H. Raymond, dated at Chicago in December. It accompanies a list of members and a part of the Executive Committee's report, which are also copied below:

I invite your careful attention to the inclosed extract from the annual report of the Executive Committee of this Association for the current year, as giving a brief summary of its purposes and advantage, with the hope that you will immediately join your company thereto.

The Association is a mutual organization, without incorporation, of, at present, 51 companies, whose aggregate gross annual earnings are over \$122,000,000 and which operate 22,210 miles of road.

A maximum estimate of the cost of membership (which covers all expenses) during the year 1877, is 0.000164 per cent. of the gross earnings of members for their respective last fiscal years, ended on or before the 31st instant. By joining, your company does not assume any additional liability, the officers of the Association not being authorized to bind the members in any settlement of claims or other matters, but are charged simply with giving reports, making recommendations, and following the instructions received from the individual members in each particular case. The assessment is divided into four equal installments, collected quarterly. Any company may withdraw from the Association during any quarter, by filing a notification to that effect and depositing therewith the amount of the assessment for that quarter. No assessment will be made for 1876 upon companies joining during the present month. A letter of instructions to me will suffice to place your company on the roll of members. Please let me hear from you immediately.

The annual meeting of the Association occurs at the Grand Pacific Hotel, Chicago, on Tuesday, 9th January, 1877, at 10 o'clock, a. m.

MEMBERSHIP, DECEMBER, 1876.

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| 1. Atchison & Nebraska. | 24. Kansas Pacific. |
| 2. Atchison, Topeka & Santa Fe. | 25. Leavenworth, Lawrence & Galveston. |
| 3. Burlington & Missouri River (in Nebraska). | 26. Lake Shore & Michigan Southern. |
| 4. Cairo & St. Louis. | 27. Lake Superior & Mississippi. |
| 5. Chicago & Alton. | 28. Louisville & Nashville. |
| 6. Chicago, Burlington & Quincy. | 29. Mineral Point. |
| 7. Cleveland, Columbus, Cincinnati & Indianapolis. | 30. Missouri, Kansas & Texas. |
| 8. Cincinnati, Lafayette & Chicago. | 31. Missouri River, Ft. Scott & Gulf. |
| 9. Chicago & Iowa. | 32. Missouri Pacific. |
| 10. Chicago & Michigan Lake Shore. | 33. Northern Pacific. |
| 11. Chicago, Milwaukee & St. Paul. | 34. Ohio & Mississippi. |
| 12. Chicago & Northwestern. | 35. Quincy, Missouri & Pacific. |
| 13. Chicago & Paducah. | 36. Rockford, Rock Island & St. Louis. |
| 14. Chicago, Pekin & Southwestern. | 37. Southern Minnesota. |
| 15. Chicago, Rock Island & Pacific. | 38. St. Louis, Iron Mountain Southern. |
| 16. Detroit, Lansing & Lake Michigan. | 39. St. Louis, Kansas City & Northern. |
| 17. Evansville & Crawfordville. | 40. St. Louis & San Francisco. |
| 18. Fort Wayne, Jackson & Saginaw. | 41. St. Louis & Southeastern (St. Louis Division). |
| 19. Flint & Pere Marquette. | 42. St. Paul & Pacific. |
| 20. Hannibal & St. Joseph. | 43. St. Paul & Sioux City. |
| 21. Illinois Central. | 44. Sioux City & St. Paul. |
| 22. International & Great Northern. | 45. Terre Haute & Indianapolis. |
| 23. Kansas City, St. Joseph & Council Bluffs. | 46. Texas & Pacific. |
| | 47. Toledo, Wabash & Western. |
| | 48. Vicksburg & Meridian. |
| | 49. West Wisconsin. |
| | 50. Wisconsin Central. |
| | 51. Western Union. |

[All correspondence and reports concerning the business of the Association should be addressed to the Secretary, at No. 101 Washington street, Chicago.]

REPORT OF EXECUTIVE COMMITTEE.

The Executive Committee respectfully submits this its report for the tenth year of the existence of the Association, ending on 1st January, 1877.

The net increase in the membership since the re-organization, from 21 to 51 companies, gives evidence of the increase, the efficiency, and the appreciation of the work of the Association, which may be summarized as follows:

1. The examination of and reporting upon claims made for the use of patented devices. Such claims cannot be properly considered by railroad managers without the consideration and advice of those who are especially qualified in the knowledge of patent law, and either have or can speedily obtain a competent knowledge of the state of the art to which the device, upon which claim is made, belongs, at the date of the patent thereon. It has come to be a practice, among railroad officials, to pay considerable sums on the demand of patent claimants, "to get rid of them," upon no further investigation than to ascertain that the thing in use is very similar, if not substantially the same, as the one described in the patent presented. The money which has been paid in such cases, when the patent is wholly void and invalid, would make a fund, the income of which would permanently meet all the expenses of the Association. The reason given for paying these sums has been "to escape litigation." But we find that when we have refused claims, upon advice from the Association that the patent is invalid, or that we do not infringe, and give our authority for so saying, the claim is finally disposed of, and no further annoyance arises therefrom. It is confidently asserted, that the money saved in such claims, and in claims that are not presented to our companies because of the existence of the Association and of our membership therein—of which there are a greater number than the members realize—alone justifies the expenditure of all that is necessary to maintain the Association in its greatest efficiency.

2. Making settlements, when practicable, and when specially requested so to do by the company or companies interested, of such claims if just. Great advantage is derived in the settlement of just claims by referring them to those who, being conversant with this particular work, fully understand the scope and the value of the patent presented, and who, representing a large number of infringers, can secure the advantages arising from the saving in time, trouble and expense by the claimants, in a settlement which shall thus include a greater or less number of companies.

3. The examination and reporting upon the patent liability of the use of devices already introduced, or of such improvements as may be made, but perhaps not for the first time made, upon our roads. We cannot insist too strongly upon the reso-

lution adopted at the eighth annual meeting of the Association—that no new device should be experimented with or introduced without first ascertaining its patent liability. It is one of the most valuable offices of the Association to inform its members to how many and what patents they become liable by the use of any device.

4. The defense, at the expense and by the officers and agents of the Association, of litigation of patent claims against railroad companies, arising out of invalid patents, exorbitant royalties or other just causes. In all the cases that have been contested, or are likely to be contested, by the Association, a considerable number, if not all, of its members are directly interested. Hence the appropriateness and economy of an organization which, with the least expense and the greatest efficiency, conducts such defense. With proper care and competent advice upon the patent relations of the many devices in use, little or no litigation of this character will arise. We are not aware that a single claim has been presented, much less any suit commenced, for the infringement of a patent by a device which was introduced since the organization of the Association and under advice from its office. Some idea of the results attained during the year may be obtained from the following facts:

During the year more than 1,500 letters have been written; over 320 reports upon letters patent have been made; about 50 claims have been settled to the satisfaction of the members interested, the amount paid for said claims being about \$25,000 and 46 important suits have been defended.

The Late Governor of Illinois on Railroad Legislation.

In his last message, Gov. J. L. Beveridge, of Illinois, has the following passage:

"The Railroad and Warehouse Commissioners also make an annual report, the year ending Nov. 30.

"The commissioners have instituted several suits to enforce and test the constitutionality of the law regulating tariffs on railroads, and in the Circuit Courts they have had partial success; but, so far, have been unable to get a decision of the Supreme Court upon the merits of the law. I deem it of the utmost importance that the principles underlying the rights of the State and of these great corporations should, at the earliest possible day, be defined and established by the highest tribunal in the land. While this litigation has been progressing it is gratifying to know that, by discussion, the rights and interests of all parties are being better understood and appreciated; that the extreme excitement of a few years ago has nearly subsided; that the bitter antagonism against railroad corporations has, in a measure, ceased; and that the companies, though not conforming strictly to the law and the schedule of rates established by the commissioners, are giving less cause for complaint for unjust discrimination and extortion. I regard this an evidence of the ability and disposition of the American people peaceably to solve all questions and adjust all conflicting interests, be they social, moral, civil, or political.

"The policy of State inspection, and of State supervision over corporations in regulating tariffs, has been seriously questioned. It is no new policy, nor confined to this State. For years, in several of the States, the State, by officers appointed or elected, has inspected certain articles of merchandise and commerce, and granted to corporate authorities the power to inspect; and other States besides Illinois have attempted to regulate charges for the transportation of freights and passengers on railroads. The policy was adopted in this State prior to my administration. Without discussing its propriety, I would say I have endeavored faithfully to administer the laws as I have found them. I believe now, as I did four years ago, that the people have rights, and corporations have rights, and by a proper understanding of these rights all conflicting interests can be adjusted. Experience teaches wherein laws are defective, and I call the attention of the General Assembly to the modifications of the inspection and railroad legislation suggested by the commissioners' report."

Transportation in Congress.

In the Senate on the 3d of January:

A bill declaring the meaning of the Pacific railroad acts was taken up, Mr. Wright, of Iowa, explaining that its object was to prevent the Central Branch Union Pacific Railroad from receiving bonds and lands for the construction of its road in excess of 100 miles from the Missouri River. (This 100 miles has been in operation many years.) Mr. Ingalls, of Kansas, had introduced a bill to enable the railroad company to submit its claims for additional subsidy and land grant (to the 100th meridian, 225 miles further than the present terminus) to the Supreme Court. Mr. Ingalls' bill was read a second time and laid upon the table.

In the House on the 3d:

Mr. Wilson, of Iowa, offered a resolution requesting the Committee on Railroads to take into consideration and report whether it is wise and expedient to provide by law for the appointment of a National Board of Engineers to supervise the condition of interstate railroads, so far as safety to passengers is concerned.

In the House on the 7th:

Mr. Goodin, of Kansas, from the Committee on Public Lands, reported a bill authorizing the McGregor Western Railroad in Iowa to intersect the road from Sioux City to the Minnesota State line (Sioux City & St. Paul) outside and west of O'Brien County, with a proviso that the grant of land shall not be increased or changed, and that homestead and pre-emption rights shall not be affected. The bill was passed.

General Railroad News.

ELECTIONS AND APPOINTMENTS.

Miami Valley.—At the annual meeting in Lebanon, O., Jan. 1, the old board was re-elected, as follows: Thomas F. Townsley, Xenia, O.; S. S. Haines, Waynesville, O.; Samuel Irons, D. Allen, Lebanon, O.; R. M. Cox, Mason, O.; James Huston, Jr., Sharon, O.; R. Beresford, Cincinnati.

Emmerton & Shipperville.—Mr. J. V. Patton has been appointed Superintendent.

Chippewa Falls & Western.—At the annual meeting in Chippewa Falls, Wis., recently, Hon. Thaddeus C. Pound was re-elected President; W. P. Bartlett, Vice-President; L. C. Stanley, General Manager.

Missouri Pacific.—Mr. A. A. Talmage has been appointed General Superintendent in place of Mr. C. W. Mead, resigned, the change taking place Jan. 1. Mr. Talmage was formerly General Superintendent of the Atlantic & Pacific and leased lines. Mr. Warder Cumming has been appointed Superintendent of the Eastern Division and Mr. M. Bullard Acting Superintendent of the Western Division, in place of Mr. Cumming, transferred. Mr. C. L. White has been appointed Auditor, and Mr. E. F. Williams Supply Agent.

New Orleans, St. Louis & Chicago.—Mr. J. B. Alexander was relieved as Receiver of this road Jan. 1, and at the same time placed in possession as Trustee of the line from New Orleans to Canton, Miss., the former New Orleans, Jackson & Great Northern road. He has appointed Mr. J. C. Clarke (Second Vice-President of the Illinois Central) Agent and Attorney to manage the property.

Wabash.—Gen. J. D. Cox, late Receiver, has been appointed

General Manager and Agent of this road, late the Toledo, Wash & Western, until the organization of the new company can be completed.

New Haven & Northampton.—At the annual meeting in New Haven, Conn., last week, the following directors were chosen: Chas. N. Yeamans, Westfield, Mass.; H. G. Knight, Easthampton, Mass.; A. Kinston, M. G. Elliott, H. M. Welch, George J. Brush, Daniel Trowbridge, New Haven, Conn.; Wm. Walter Phelps, Englewood, N. J.; George St. John Sheffield, New York.

Cleveland & Pittsburgh.—At the annual meeting in Cleveland, O., Jan. 3, the following directors were chosen: James F. Clark, J. W. Painter, R. P. Banney, Cleveland; R. R. Springer, Cincinnati; J. N. McCullough, B. F. Jones, Pittsburgh; Thomas A. Scott, Philadelphia; Samuel J. Tilden, August Belmont, Charles Lanier, George W. Cass, Francis T. Walker, New York. The road is leased to the Pennsylvania Company.

Port Dover & Lake Huron.—Mr. C. N. Scott has been appointed General Superintendent, with headquarters at Woodstock, Ont., in place of A. D. Wright, resigned.

Little Rock, Mississippi River & Texas.—The officers are now as follows: President, J. E. Redfield, Boston; Treasurer, E. L. Adams, Boston; Chief Engineer, James H. Morley, Little Rock, Ark.; General Superintendent, W. S. Houdlette, Little Rock, Ark.; General Freight and Ticket Agent, J. A. Woodson, Pine Bluff, Ark.

Des Moines & Minnesota.—Mr. C. B. Atkins has been appointed General Freight and Ticket Agent, with office at Des Moines, Iowa.

Cairo & St. Louis.—Mr. A. D. Hutchins has been appointed Cashier and Paymaster in place of E. L. Sargeant; W. G. Bronson, Train Master, in place of J. E. Clarke, and J. H. Smith Master Mechanic, in place of W. D. Macfarlane.

Tioga.—Mr. C. C. Drake has been appointed General Freight and Passenger Agent, with office at Elmira, N. Y.

Petersburg.—Mr. B. R. Dunn, Master of Road, has been appointed Superintendent of Transportation also.

Northeastern, of Georgia.—The officers are: President, A. K. Childs; Secretary and Treasurer, John C. Johnson; Superintendent, James M. Edwards. The offices are at Athens, Ga.

Northern, of Canada.—Mr. Alfred Telfer has been appointed General Ticket Agent, in place of Adam Rolph.

Delaware & Hudson Canal Co.—Mr. Joseph Angell has been appointed General Passenger and Ticket Agent, in place of S. E. Mayo, resigned.

Pennsylvania & New York.—At the annual meeting in Philadelphia, Jan. 8, Mr. R. H. Sayre was re-elected President, with the following directors: Asa Packer, W. W. Longstreet, Charles Hartshorne, J. J. Taylor, Robert Lockhart, G. B. Linderman, R. A. Packer, J. H. Swoyer, Victor E. Piolet, W. H. Sayre, J. W. Hollenbeck, E. P. Wilbur.

Philadelphia & Reading.—At the annual meeting in Philadelphia, Jan. 8, Mr. Franklin B. Gowen was re-elected President, with the new board of managers: H. Pratt McKean, A. E. Borie, J. B. Lippincott, John Ashhurst, Henry Lewis, Isaac Hinkley. The board re-elected David P. Brown, Secretary; Samuel Bradford, Treasurer.

North Pennsylvania.—At the annual meeting in Philadelphia, Jan. 8, Mr. Franklin A. Comly was re-elected President, with the following directors: John Jordan, Jr., J. Gillingham Fell, Wm. C. Ludwig, Ellwood Shannon, Edward C. Knight, Alfred Hunt, Thomas Smith, Arlo Pardee, James H. Stevenson, Jacob Biegel, Richard J. Dobbins, Charles A. Sparks.

Augusta & Savannah.—At the annual meeting in Savannah, Jan. 1, the following directors were chosen: Wallace Cumming, John Davison, Wm. Duncan, John L. Hardee, Wm. Hope Hull, A. B. Lawton, George S. Owens. The road is leased to the Central, of Georgia.

Central, of Georgia.—At the annual election in Savannah, Jan. 1, the following directors were chosen: W. M. Wadley, Andrew Low, E. C. Anderson, G. M. Sorrell, George Cornwell, W. W. Gordon, J. Bauers, Savannah, Ga.; W. B. Johnston, J. F. Gresham, Macon, Ga.; H. H. Epping, Columbus, Ga.; J. F. Bozeman, Atlanta, Ga.; Moses Taylor, W. R. Garrison, New York. The only new director is Mr. Epping, who replaces Octavius Cohen, deceased.

Montpelier & Wells River.—The bondholders, having taken possession of the road, have organized a new company by electing the following directors: Timothy B. Redfield, Montpelier, Vt.; S. S. Thompson, Lyndon, Vt.; Wm. H. Bingham, Stowe, Vt.; D. B. Sortwell, Cambridge, Mass.; E. C. Sherman, Boston. The board elected D. R. Sortwell, President; Joel Foster, Jr., Clerk and Treasurer.

Boston & Lowell.—At the annual meeting in Boston, Jan. 3, the following directors were chosen: Francis B. Crowninshield, Josiah G. Abbott, Wm. A. Burke, Thomas Talbot, Edwin Morey.

Manhattan & Northwestern.—Mr. L. R. Elliott, President of the company, has been appointed Receiver.

New York, New Haven & Hartford.—At the annual meeting in New Haven, Jan. 10, the following directors were chosen: Chester W. Chapin, Springfield, Mass.; C. M. Pond, Henry C. Robinson, Hartford, Conn.; E. M. Reed, E. H. Trowbridge, George H. Watrous, New Haven, Conn.; Wm. D. Bishop, Nathaniel Wheeler, Bridgeport, Conn.; Wilson G. Hunt, George N. Miller, Augustus Schell, A. R. Van Nest, Wm. H. Vanderbilt, New York. The only new director is Mr. Wm. H. Vanderbilt, who succeeds Cornelius Vanderbilt, deceased.

Philadelphia, Wilmington & Baltimore.—At the annual meeting in Wilmington, Del., Jan. 8, the following directors were chosen: Thomas Kelso, Enoch Pratt, Thomas Donaldson, Samuel M. Shoemaker, Baltimore; Jacob Tome, Port Deposit, Md.; Joseph Brimhurst, Samuel Harlan, Jr., Charles Warner, Wilmington, Del.; Samuel M. Felton, Thurlow, Pa.; Wm. Sellers, Isaac Hinkley, Philadelphia; Nathaniel Thayer, Wm. Minot, Charles P. Bowditch, Robert H. Stevenson, Boston. The new directors are Messrs. Minot and Stevenson, who succeed Wm. Welch and Thomas Whitridge. The board re-elected Isaac Hinkley, President; Enoch Pratt, Vice-President; Alfred Horner, Secretary and Treasurer; Robert Craven, Assistant Secretary.

Chicago, Saginaw & Canada.—Mr. Irving, of Muskegon, Mich., has been appointed Receiver.

Louisville, Paducah & Southwestern.—St. Louis papers state that Gen. R. H. G. Minty, late of the St. Louis and Southwestern, has been appointed General Manager of this road.

New York Cheap Transportation Association.—At the annual meeting in New York, Jan. 9, the following officers were chosen: President, Benjamin P. Baker; Vice-Presidents, F. A. Conkling, John F. Henry, J. P. Robinson; Secretary, F. B. Thurber; Assistant Secretary, Darwin R. James; Secretary pro tem., A. B. Miller; General Agent, Theodore F. Lees; Directors, H. B. Claffin, B. G. Arnold, George A. Merwin, John H. Kemp, A. B. Miller, H. K. Miller, Ambrose Snow, B. P. Baker, Chas. Watrous, Wm. Duryea, Theo. F. Lees, J. Seaver Page, J. P. Townsend, F. B. Thurber, F. A. Schroeder, D. C. Robbins, Jas. F. Wenman, Harvey Farrington, E. R. Durkee, John F. Henry, John Dwight, W. I. Preston, W. H. Wiley, Benj. Lichtenstein, F. L. B. Mayhew, Jas. S. Barron, James Pyle, Henry E. Hawley, E. P. Browning, Jordan L. Mott, J. P. Robinson, F. A. Conkling, J. F. McCoy, Darwin R. James, Simon Sterne, Hezekiah Shailer.

West Chester & Philadelphia.—At the annual meeting in Philadelphia, Jan. 8, Edward Hoopes was elected President, with the following managers: M. Baird, J. Edward Farnum, William H. Miller, Albert C. Roberts, Samuel Riddle, George Callaghan, Charles Fairbank, Lorenzo Beck, Samuel J. Sharpless. The board elected Thomas H. Hall, Treasurer; A. L. Smith, Secretary; A. D. Sharpless, Auditor; Henry K. Smith, Superintendent.

TRAFFIC AND EARNINGS.

Railroad Earnings.

Earnings for various periods are reported as follows:

Year ending Sept. 30:	1875-76.	1874-75.	Inc. or Dec.	P. c.
New Haven & Northampton.....	\$570,397	\$595,164	Dec..	\$24,767 4.2
Expenses.....	365,067	390,251	Dec..	34,184 8.6
Net earnings.....	\$205,330	\$195,913	Inc..	\$9,417 4.8
Earnings per mile.....	5.282	5.511	Dec..	229 4.2
Per cent. of exps.....	64.06	67.08	Dec..	3.03 4.5
Year ending Oct. 31:				
North Pennsylvania.....	\$1,875,866	\$1,417,735	Inc..	\$258,131 18.2
Expenses.....	889,347	951,184	Dec..	61,837 6.5
Net earnings.....	\$786,519	\$466,551	Inc..	\$319,968 68.6
Earnings per mile.....	21.485	20.941	Inc..	544 2.6
Per cent. of exps.....	53.07	67.09	Dec..	14.02 20.9
Philadelphia, Wil. & Baltimore.....	3,466,136	3,046,171	Inc..	419,965 13.8
Expenses.....	1,834,882	1,803,867	Inc..	29,015 1.6
Net earnings.....	\$1,631,254	\$1,242,304	Inc..	\$389,950 31.5
Earnings per mile.....	30.810	27.077	Inc..	3,733 13.8
Per cent. of exps.....	52.94	59.28	Dec..	6.34 10.7
Year ending Nov. 30:				
Philadelphia & Reading.....	\$12,227,511	\$12,660,927	Dec..	\$433,416 3.4
Expenses.....	8,510,350	8,130,159	Inc..	380,191 4.7
Net earnings.....	\$3,717,161	\$4,530,768	Dec..	\$813,607 18.9
Per cent. of exps.....	69.60	64.20	Inc..	5.40 8.4
Year ending Dec. 30:				
Atchafson, Topeka & Santa Fe.....	\$2,474,263	\$1,513,343	Inc..	\$960,920 63.5
Chicago & Alton.....	4,966,349	4,656,764	Inc..	309,585 6.6
Chi., Milwaukee & St. Paul.....	8,055,139	8,255,743	Dec..	200,604 2.4
Illinois Central.....	7,050,747	7,802,556	Dec..	751,809 9.6
Indianapolis, Bloom. & Western.....	1,462,804	1,355,495	Inc..	107,309 7.9
International & Grt. Northern.....	1,416,174	1,365,634	Inc..	50,544 3.7
Missouri, Kansas & Texas.....	3,217,277	2,904,925	Inc..	312,352 10.8
St. Louis, Alton & T. H., Belleville Line.....	497,923	561,868	Dec..	63,945 11.4
St. Louis, Kansas City & Northern.....	3,137,280	2,636,707	Inc..	500,573 19.0
St. Louis, Iron Mt. & Southern.....	3,996,249	3,802,942	Inc..	193,307 5.1
Toledo, Peoria & Warsaw.....	1,411,732	1,120,488	Inc..	291,244 26.0
Eleven months ending Nov. 30:				
Burlington, Cedar Rapids & Northern.....	\$1,037,583	\$1,200,574	Dec..	\$162,991 13.6
Expenses.....	801,770	775,864	Inc..	25,906 3.3
Net earnings.....	\$235,813	\$424,710	Dec..	\$188,897 44.5
Per cent. of exps.....	77.24	64.60	Inc..	12.58 19.5
Burlington & Missouri River in Nebraska.....	833,840	660,141	Inc..	173,699 26.3
Expenses.....	305,564	257,629	Inc..	47,935 15.6
Net earnings.....	\$528,276	\$402,512	Inc..	\$125,764 31.2
Per cent. of exps.....	36.65	39.03	Dec..	2.38 5.1
Chicago, Burlington & Quincy.....	11,177,830	10,914,980	Inc..	262,850 2.4
Expenses.....	5,769,703	5,593,474	Inc..	176,229 3.2
Net earnings.....	\$5,408,127	\$5,321,606	Inc..	\$86,521 1.6
Per cent. of exps.....	51.61	51.32	Inc..	0.29 0.6
Cleveland, Mt. Vernon & Delaware.....	348,357	393,342	Dec..	44,985 11.4
Expenses.....	273,553	296,916	Dec..	24,363 8.2
Net earnings.....	\$75,804	\$96,426	Dec..	\$20,622 27.4
Per cent. of exps.....	78.32	75.55	Dec..	2.77 3.7
Hannibal & St. Joseph.....	1,769,121	1,509,764	Inc..	259,357 17.2
Louisville, Paducah & Southwestern.....	412,041	.....	.....	.....
Expenses.....	454,822	.....	.....	.....
Net earnings.....	\$87,219	.....	.....	.....
Per cent. of exps.....	46.13	.....	.....	.....
Mobile & Ohio.....	1,793,598	1,623,328	Inc..	\$170,270 10.5
St. Louis, Iron Mt. & Southern.....	3,404,281	3,305,292	Inc..	98,989 5.7
Expenses.....	1,813,541	1,829,225	Dec..	15,684 0.9
Net earnings.....	\$1,590,740	\$1,476,067	Inc..	\$204,673 13.9
Per cent. of exps.....	51.82	55.43	Dec..	3.61 6.5
St. Louis & Southwestern.....	1,012,410	913,161	Inc..	99,249 10.9
Expenses.....	791,271	.....	.....	.....
Net earnings.....	\$221,139	.....	.....	.....
Per cent. of exps.....	78.19	.....	.....	.....
Two months ending Nov. 30:				
Boston & Lowell.....	\$288,906	\$297,992	Dec..	\$8,986 3.0
Expenses.....	169,719	208,157	Dec..	38,438 14.1
Net earnings.....	\$119,190	\$89,745	Inc..	\$29,445 24.5
Per cent. of exps.....	58.73	69.85	Dec..	11.12 15.9
Month of November:				
Hannibal & St. Joseph.....	\$178,401	\$169,639	Inc..	\$8,762 5.2
Mobile & Ohio.....	285,000	255,394	Inc..	29,606 11.6
Month of December:				
Atchafson, Topeka & Santa Fe.....	\$192,128	\$145,569	Inc..	\$46,559 32.0
Chicago & Alton.....	380,172	369,312	Inc..	10,860 2.9
Chicago, Milwaukee & St. Paul.....	610,000	747,893	Dec..	137,893 18.4
Illinois Central.....	503,140	679,434	Dec..	176,294 26.0
Ind., Bloomington & Western.....	113,656	140,815	Dec..	27,159 19.3
International & Grt. Northern.....	219,200	190,191	Inc..	29,009 15.3
Missouri, Kansas & Texas.....	296,466	295,738	Inc..	728 0.2
St. Louis, Alton & T. H., Belleville Line.....	54,080	50,824	Inc..	3,256 6.4
St. Louis, Kan. City & Northern.....	261,178	260,536	Dec..	642 0.2
St. Louis, Iron Mt. & Southern.....	486,300	497,650	Dec..	11,350 2.3
Toledo, Peoria & Warsaw.....	98,065	116,762	Dec..	18,697 16.0
Week ending Dec. 15:				
Great Western, of Canada.....	\$42,329	\$46,873	Dec..	\$4,544 26.9

PERSONAL.

—On New Year's day Chief Engineer T. J. Nicholl, of the Gilman, Clinton & Springfield, was presented with a gold chain and locket by the employees in his department. The presentation was made by Mr. H. Crabtree, Superintendent of Bridges, in a very neat and appropriate speech. At the same time a similar present was made to Mrs. Nicholl.

—Among the members of the lower House of the Massachusetts Legislature are Mr. Edward J. Crossman, of Lowell, Superintendent of the Framingham & Lowell road, and Mr. David Z. Smith, of Salem, formerly a well-known contractor and for 25 years Roadmaster of the Eastern Railroad.

—Mr. C. W. Mead resigned his position as General Superintendent of the Missouri Pacific Jan. 1. He had held that position about a year, having been previously General Manager of the Northern Pacific, Superintendent of the Hannibal & St. Joseph and the Union Pacific.

—Mr. C. H. Chappell resigned his position as Assistant General Superintendent of the Missouri Pacific, Jan. 1. Before going to the Missouri Pacific he was for some time on the Missouri, Kansas & Texas, to which he went from the Chicago, Burlington & Quincy.

—Maj. R. M. McDowell has resigned his position as Secretary of the Utica, Ithaca & Elmira Company.

—Capt. John A. Netherland, Purchasing Agent of the Chesapeake & Ohio, was married lately to Miss Mattie J. Trevilian, of Trevilian Station, Va.

—Mr. John W. Bacon, Superintendent, and Charles A. Craig, Master Mechanic of the Danbury & Norwalk Railroad, have resigned their respective positions.

—Charles H. Fletcher, President of the St. Louis, Keosauqua & St. Paul Company, was shot and killed in Keosauqua, Ia., Jan. 2, by John Brown, in a dispute about the latter's sister.

—It is reported that Mr. G. Jordan, Superintendent and Chief Engineer of the Mobile & Montgomery, will soon resign that position to accept one on the Memphis & Charleston.

—Reports of the resignation of Mr. H. B. Ledyard, General Superintendent of the Michigan Central, have been current, but are stated to be without foundation. It is also stated that Mr. Ledyard's office will remain at Detroit.

THE SCRAP HEAP.

Railroad Manufactures.

The Milton (Pa.) Car Works are building 50 oil tank cars. A new company known as the Carbon Iron Manufacturing Co., has been organized by the parties who lately bought the blast furnace at Parryville, Pa.

The iron manufacturing firm of Seyfert, McManus & Co., of Reading, Pa., has been reorganized as a joint-stock company with the following officers: President, George F. Baer, Reading; General Manager, J. N. Hutchinson, Philadelphia; Treasurer, F. W. Ralston, Philadelphia; General Superintendent, W. S. McManus, Reading.

The works of the La Mothe Iron Car Co. are to be established at McKeesport, Pa.

The well-known railroad supply firm of Vose, Dinsmore & Co., of New York, has made an assignment for the benefit of its creditors. Mr. Benjamin Atha, of Newark, N. J., is assignee.

The new furnace of the Cambria Iron Co., at Johnstown, Pa., went into blast Dec. 23 and is running on Bessemer pig.

The Danforth Locomotive Works, at Paterson, N. J., last week shipped a large iron highway bridge, which is to span the River Yumure, at Matanzas, Cuba.

Smith, Sutton & Co., of the La Belle Steel Works at Pittsburgh, have erected temporary buildings to replace those destroyed and repaired their machinery. The works started up Jan. 9, except the spring shop, which will start Jan. 15.

The Brooks Locomotive Works, at Dunkirk, N. Y., have just delivered an engine to the Burlington & Northwestern road.

The Safford draw-bar is being put upon 300 new cars for the Michigan Central and 50 for the St. Louis & Southwestern.

The Weight of Snow.

A correspondent of the *American Architect and Building News* has made an experiment to determine the weight of snow "mingled with heat and wet with rain," and found its weight to be 36 pounds per cubic foot, a fact worth noting. He says: "In my opinion a winter roof-load would scarcely ever be met with of greater specific gravity."

OLD AND NEW ROADS.

The Hoosac Tunnel Line.

In his annual message to the Legislature, Governor Rice, of Massachusetts, describes the work done during the past year. He puts the responsibility for the under-estimate of cost of the improvements now in progress on the corporations who had charge of the tunnel two years ago, and asks for an appropriation to make up the deficiency, the contractors having, with his approval, continued to work in anticipation of such relief. The Governor appears to favor a consolidation of the State road with the other roads forming the Tunnel Line, the State to be represented in the management. Failing that he recommends that the State equip the road, at least with motive power, and that its management be given to a commission to be specially appointed for that purpose. He does not think the commission plan the best, but suggests it as necessary until a consolidation can be effected.

Rochester & State Line.

The Chief Engineer and General Superintendent, Mr. J. E. Childs, informs us that there is iron on hand to lay 20 miles more track besides the 10 miles recently completed between Leroy and Pearl Creek, and the entire road from Rochester to Salamanca will be completed and put in operation next summer.

Lockport & Buffalo.

The grading of this road is completed from Lockport, N. Y., to Tonawanda, except in one or two places, where there has been trouble about the right of way. The bridging is done and ties are being distributed along the line.

Manchester & Keans.

This company has concluded a new contract for the construction of its road with Kenrick & Kiernan, of Boston. They agree to have the line ready for use by Dec. 1, 1877, and give good security for faithful performance of the contract.

Duck River Valley.

The track is now laid from Columbia, Tenn., on the Nashville & Decatur road, northwestward six miles to Fountain Creek, where the Louisville Bridge & Iron Company is erecting a bridge. When this bridge is completed the track will be extended to Lewisburg, 14 miles further.

Atlantic & Gulf.

The interest on the consolidated bonds due Jan. 1 was not paid on that date, and President Screven has issued the following circular:

"A violent epidemic of yellow fever prevailed in the city of Savannah from the latter part of the month of August until toward the close of the month of November, 1876, which paralyzed the industries and seriously reduced the commerce of the city. In consequence of this a great part of the revenues of the company were cut off during the period when they have all

ways been largest, and I regret, therefore, to be compelled to claim the indulgence of the holders of the interest coupons of the company falling due this day—a request which the company has not hitherto had occasion to make, and now makes only under the force of a calamity wholly providential.

"In asking for a postponement, it is hoped that within a brief period a proposition can be submitted which will be satisfactory to the bondholders and tend to a speedy adjustment of the difficulties of the company. In the meantime everything will be done to protect their interests, and I will be happy to give any bondholder any information he may desire."

The company owns a line from Savannah to Bainbridge, Ga., 239 miles, with branches to Albany, Ga., and to Live Oak, Fla., 350 miles in all. For the year 1875 its net earnings were \$326,928, being nearly \$50,000 greater than the amount required to pay interest on the funded and floating debt.

Meetings.

Meetings will be held by the following companies at the times and places given:

Connecticut River, annual, at the office in Springfield, Mass., Jan. 17.

United States Rolling Stock Co., annual, at the office in New York, Feb. 5, at noon.

Philadelphia & Erie, at the office in Philadelphia, Feb. 12, at 11 a. m.

Galveston, Harrisburg & San Antonio.

This company has leased from the International & Great Northern the right to run trains over about eight miles of that company's Columbia Division, from Peirce Junction to Houston, and on Jan. 1 began to start its trains from Houston instead of Harrisburg as heretofore. Galveston freight will probably continue to be transferred to the Galveston, Houston & Henderson at Harrisburg, as heretofore, and the seven miles from Peirce Junction to Harrisburg will be used as a branch.

Ohio & Mississippi.

It is stated that the petition to the Court for the continuance of Mr. John King, Jr., as one of the receivers has been signed by holders of \$7,000,000 bonds and \$9,000,000 stock.

Wheeling, Pittsburgh & Baltimore.

This road, originally the Hemphill Railroad, is to be sold at auction in Wheeling, W. Va., Jan. 18, to satisfy a judgment for \$95,000 obtained in the United States Court by the contractors who graded the road. The claim has been in litigation since 1855. The road is 32 miles long, from Wheeling, W. Va., to Washington, Pa., and is worked by the Baltimore & Ohio, which company will, it is expected, buy in the property.

Lexington & St. Louis.

This road is to be sold in St. Louis, March 1, by H. B. Hamilton, Assignee, under a decree in bankruptcy. The road is 52 miles long, from Sedalia, Mo., to Lexington, and has been worked as a branch of the Missouri Pacific.

Detroit & Milwaukee.

The Detroit Tribune says: "The bondholders of this road have decided to reorganize the company, and have appointed a reorganization committee of five to make the proper arrangements for the sale of the property, which is to occur Jan. 17. The committee was authorized by the bondholders to solicit bids for leasing the road from the Grand Trunk, Great Western, New York Central and other trunk lines. The Detroit & Milwaukee will be organized by the old bondholders under the laws of Michigan. The debt is to be reduced from \$10,000,000 to \$5,000,000. Of the latter amount, \$2,000,000 will pay interest at 6 to 7 per cent., as may yet be arranged, and the other \$3,000,000 will pay nothing for the first year, 4 per cent. for the following five years, and 5 per cent. for the next five years, and after that 6 per cent. As soon as the road has been sold, which has to be done *pro forma*, so as to get it out of the hands of the receiver, it will be leased to the road which makes the best offer, as stated above."

Grand Trunk.

A Montreal dispatch says that on Jan. 5 Grand Chief Engineer Arthur, of the Brotherhood, with a committee of the Grand Trunk men, had a long consultation with General Manager Hickson, resulting in a settlement of all differences between the company and the engineers. It is stated that the agreement provides for the continuance of the old rates of pay and for the dropping of all prosecutions begun against men who took part in the strike and were charged with violence or with obstructing the running of trains.

Waterville & Washington.

The track is now laid to Washington, Kan., 21 miles westward from Waterville. Trains are running regularly to Greenleaf, 12 miles from Waterville, and will soon run through to Washington. The road, though built and owned by a separate company, is an extension of the Central Branch, Union Pacific, and will be worked as part of that road, making it 121 miles long, from Atchison, Kan., to Washington.

Manhattan & Northwestern.

Mr. L. R. Elliott, who is also President of the company, has been appointed Receiver of its property. The road was intended to run from Manhattan, Kan., northward, and was graded three years ago as far as the Central Branch crossing, some 25 miles; two years ago arrangements were made to lay the track, but fell through, we believe, after a few rails had been put down. It is now said that negotiations are in progress for a resumption of work.

Philadelphia & Reading.

At the annual meeting Jan. 8 the old officers and managers were re-elected, contrary to reports lately current. The stockholders voted to approve the mortgage lately executed and to authorize the issue of \$10,000,000 new bonds as proposed.

The new general mortgages have been duly recorded in the counties along the line. One by the Philadelphia & Reading Railroad Company is made to Edwin M. Lewis, trustee, for \$10,000,000; the other, also for \$10,000,000 is executed by the Philadelphia & Reading Coal & Iron Company to George de B. Keim, trustee. They cover all property of both companies, wherever situated, subject, of course, to the liens of former mortgages.

Michigan Railroad Taxation.

Michigan papers are calling attention to the fact that the 30 years named in the original charters of the Michigan Central and the Michigan Southern companies, during which those charters were to remain unchanged, have now expired, and that the power of alteration or amendment reserved by the State after 30 years can now be exercised. Several are advocating an increase of the taxes to some amount more in proportion to the value of the properties, as compared with other taxable property, than the tax of three-quarters of one per cent. on the stock and funded debt which they now pay. It is probable that there will be a good deal of discussion on this tax question during the coming session of the Legislature.

Hannibal & St. Joseph.

The Governor of Missouri, in a special message, calls the attention of the Legislature to the fact that when the State loaned its credit to this company to the amount of \$1,500,000 in 1855, it was provided that any surplus of the proceeds of the loan and grant which might remain after providing for the then existing land-grant mortgages of the company should be paid into the State Treasury for the purpose of retiring the State bonds issued to the company. He says that the land bonds of the company have been substantially provided for and paid off,

and that proceedings in equity have been begun to close the trust and to transfer its assets to the company. He asks the Legislature to take the necessary action to enable the State to intervene in the proceedings for the purpose of securing its rights in those assets.

The trustees under the land-grant mortgage have now about \$207,000 in cash with which to pay the \$165,000 land-grant bonds still outstanding and are paying 10 per cent. premium for the bonds. After paying off all the bonds there will remain on hand about 100,000 acres of unsold land and about \$3,000,000 of interest-bearing notes given for land. Application has been made by the trustees to the courts to have the trust closed and these remaining assets transferred to the company.

Boston & Albany.

The annual report of the State directors to the Massachusetts Legislature, after giving the usual particulars as to earnings, traffic, etc., says that the road is in excellent condition, and so managed as to do its work very cheaply. Nothing has happened during the year, which, in their opinion, will require any investigation or other legislative action.

Petersburg.

The motion for the appointment of a receiver was heard in the United States Circuit Court, at Alexandria, Va., Jan. 9. After hearing the arguments the Court decided to refuse to grant the motion.

Lake Shore & Michigan Southern.

The temporary bridge erected to replace the one which gave way at Ashtabula was completed Jan. 10, and through traffic now passes over the main line without interruption.

Chicago, Dubuque & Minnesota.

A meeting of the bondholders of this company and the Chicago, Clinton & Dubuque is to be held at the Parker House, Boston, Jan. 17, at noon. The call for the meeting is addressed especially to "bondholders who were stockholders of the Chicago, Burlington & Quincy Railroad Company, and who obtained their bonds by subscribing for them on the faith of the circular issued to them as such stockholders."

Eastern.

A telegram from Concord, N. H., says that on Jan. 7 Edward L. Abbott was appointed Receiver of the Eastern Railroad of New Hampshire. No further information has been received and no statement made of the grounds of appointment. The New Hampshire section is essential to the completeness of the line, and a receivership might cause some embarrassment to the company.

Bristol & Vergennes.

It is proposed to build a railroad from Bristol, Vt., west by north to Vergennes on the Rutland road, and the towns of Bristol, Lincoln and Starksboro are asked to subscribe to the stock. The road would be about 12 miles long.

Chicago, Danville & Vincennes.

The Master in Chancery gives notice that under the decree in foreclosure lately granted he will sell in Chicago, Feb. 7, the Illinois Division, including the line from Dolton to Danville, 108 miles; the branch from Bismarck to the Indiana line, 4.6 miles; the yard tracks in Chicago and the equipment and franchises. One-quarter of the purchase money must be paid at the time of sale, one-half in three and the rest in six months.

Texas & Pacific.

It is reported from Washington that this company and the Southern Pacific have agreed upon a compromise, by which the latter company will withdraw its opposition to the Texas Company's application for a subsidy. The House Pacific Railroad Committee has under consideration a compromise bill, giving a subsidy to both parties, the Texas & Pacific to build westward to a point in New Mexico about 100 miles west of El Paso; the Southern Pacific to build eastward to that point, and also to build a branch from some point near the San Geronimo Pass to San Diego.

Michigan Central.

The statement for the six months ending Nov. 30 is as follows:

Gross earnings	\$3,324,285 78
Expenses and taxes	\$2,335,705 61
Interest	817,915 00
	3,153,620 61
Net balance	\$170,665 27
Income from other sources	137,276 03
Total	\$307,941 30

The floating debt was reduced during the half-year by \$386,359.37 and was \$342,150.88 on Dec. 1. The bonded debt (\$1,518,000) remained unchanged; the bonded debt of the leased lines was \$7,087,000 June 1 and \$7,005,000 Dec. 1, the reduction of \$82,000 being from payment of Jackson, Lansing & Saginaw bonds from proceeds of land sales, in pursuance of the modified agreement with that company.

Wabash.

New companies have been organized under the general laws of Ohio, Indiana and Illinois by the purchasers of the Toledo, Wabash & Western and have been consolidated as the Wabash Railroad Company. The sale of the road has been finally confirmed in all three States and deeds for the property given.

Hon. J. D. Cox, late Receiver, has issued the following circular:

"The receivership of the Toledo, Wabash & Western Railway Company having terminated, so far as concerns the possession of the railway and property appurtenant thereto, by order of Court directing the delivery thereof to the purchasers under the late foreclosure sale, the undersigned has been appointed General Manager and Agent of such purchasers until the complete organization of the consolidated corporation under which said railway will be hereafter operated.

"The undersigned has received possession as General Manager and Agent, as above set forth, and assumes control and management accordingly. The style used will be General Manager of the Wabash Railway.

"All present officers and agents will be continued in their duties till further orders, and all existing arrangements with other companies are by their consent continued temporarily.

"All accounts of and with the Receiver of the Toledo, Wabash & Western Railway Company will be closed out by him without intermixture with new business arising or after this date, which last must be settled with the undersigned as General Manager and Agent of the purchasers, as aforesaid.

"The accounting and disbursing officers of the receivership and of the present management will, however, be the same, and no delay or inconvenience will occur in the regular transaction of business, and settlement of accounts."

Brattleboro & Whitehall.

This company was to be organized this week at Brattleboro, Vt. The road, a preliminary survey of which has been completed, is to run from Brattleboro, Vt., northwest to Whitehall, N. Y., about 85 miles. From Brattleboro to Jamaica the new survey follows the line surveyed several years ago for the West River road, then runs through Manchester, Dorset, Pawlet and Granville to Whitehall. It is claimed that a line has been found which can be built at a moderate cost, with one grade of 100 feet to the mile and no others over 60 feet. Its projectors expect that it will, if built, secure a share of the lumber traffic coming from Canada by way of Lake Champlain and that it will also have a considerable business in lumber, slate and

marble from the country along the line. They have also in view an extension from Brattleboro southeast to Boston, but do not intend to press this at present.

Texas & New Orleans.

Since the opening of this road from Houston, Tex., through to Orange it is reported as doing a considerable business, and additional equipment has been ordered. Considerable shipments of cattle are being made from Houston, the stock being hauled to Orange and then driven across country to Atchafalaya, where they are shipped by boat to their destination. The company has bought a large tract of land in Houston on which a depot and repair shops are to be built.

Chicago, Saginaw & Canada.

On application of the creditors, Mr. Irving, of Muskegon, Mich., has been appointed receiver and has taken possession. The company is said to have a large floating debt and to be in very embarrassed circumstances. The road is intended to run from St. Louis, Mich., to Grand Haven, is completed from St. Louis to Cedar Lake, 20 miles, and graded for some distance further.

Dividends.

Dividends have been declared by the following companies: Housatonic, 2 per cent., quarterly, on the preferred stock, payable Jan. 5.

Winchester & Potomac (leased to Baltimore & Ohio), 3 per cent., semi-annual, payable Jan. 1.

Little Schuylkill, 3½ per cent., semi-annual, payable on demand.

Terre Haute & Indianapolis, 5 per cent., semi-annual, payable Jan. 25.

West Chester & Philadelphia, 4 per cent., semi-annual, payable Jan. 8.

Middletown, Unionville & Water Gap (leased to New Jersey Midland), 3½ per cent., semi-annual, payable Jan. 18.

Portland & Ogdensburg.

Work on the tracklaying of the Vermont Division has been begun on the Swanton end of the line and a construction train has been put on the road there. A large amount of iron has been delivered at Swanton.

Columbus & Toledo.

The ballasting is now fully completed, and regular trains began to run between Columbus, O., and Toledo Jan. 11. The distance is 122 miles, of which 117 miles are new track built by the Columbus & Toledo company, and five miles, from Walbridge to Toledo, is leased from the Pennsylvania Company, whose depot in Toledo is also used.

Ashburnham.

This road was sold at public sale Dec. 30 and was bought by Amasa Norcross, of Fitchburg, Mass. It was built in 1873 and is three miles long, from South Ashburnham, Mass., to Ashburnham Village.

Paris & Danville.

The Commercial and Financial Chronicle says: "The bondholders of this railroad, which has been in the hands of a receiver for the past year, have made a proposition to H. Sanford & Co., who individually endorsed the bonds sold, that if they will agree to relinquish all the money they put into the road and deliver the road over to the first-mortgage bondholders, the latter will pay off the unsecured creditors in first-mortgage bonds at 80 cents on the dollar, allowing all bona fide claimants the face of their claims, with accrued interest to July 1, 1876. Should the arrangement be effected, all indebtedness will be so satisfied, and the bondholders left in possession of the road."

Union Pacific.

A general reduction, varying from 5 to 25 per cent., was made in the wages of employees Jan. 1. It is said that the locomotive engineers were excepted and that their wages were not reduced.

Kansas Pacific.

The following gentlemen have been appointed a committee to represent the first-mortgage bondholders: L. H. Meyer, Chairman; J. de Neuville, Corresponding Secretary; A. H. Holmes, Recording Secretary; A. Lichtenstein, C. H. Woerschoeff, A. Ritten, G. P. Lowery, R. M. Shoemaker, Horace White.

Springfield, Jackson & Pomeroy.

Tracklaying on this road was begun at Jackson, O., near the close of the year and on Jan. 1 the iron was laid for two miles. The bridge over the Scioto River at Waverly is being pushed forward as rapidly as possible.

Great Southern.

In pursuance of an order of the Superior Court of Wayne County, Ga., James F. King, Receiver, will sell at public auction in Jessup, Ga., March 6, all the property of this company in Georgia, consisting of the right of way from Millen to the Florida line, with some graded road-bed and all the rights, franchises, etc., of the company.

New Orleans, St. Louis & Chicago.

The receivership terminated on Jan. 1, when the section of the line from New Orleans to Canton, Miss., the former New Orleans, Jackson & Great Northern road passed into the hands of J. B. Alexander, late Receiver, as Trustee, pending its sale under the decree of foreclosure. Mr. J. C. Clarke, Second Vice-President of the Illinois Central, will have charge of the road as Agent for the Trustee.

The sale of this section of the road is advertised to take place in New Orleans, March 17. It will include the line from New Orleans to Canton and the branch from Durant to Kosciusko, with all the property appertaining. The sale is ordered to satisfy the mortgage of May 1, 1872, and will be made subject to the prior mortgages.

Chicago, Dubuque & Minnesota.

A dispatch from Dubuque, Ia., says that the United States Circuit Court has made an order enjoining F. O. Wyatt from taking charge of this road and the Chicago, Clinton & Dubuque as agent for the trustees. The Receiver, Mr. John Thompson, is continued in charge.

Columbia & Port Deposit.

On the northwestern end of this road the track is laid to a point half a mile east of Peach Bottom, 27.1 miles from Columbia, Pa., and 4.1 miles beyond Phyt's Eddy, the last point reported. On the southeastern end the track is now laid to a point one mile west of Conowingo and 8.9 miles from Port Deposit. There remains a gap four miles long, on which track is yet to be laid to complete the road.

Alexandria & Washington.

A suit is in progress in which the District of Columbia seeks to have this road sold in satisfaction of a claim for principal and interest of \$60,000 loaned to the company about 20 years ago. The matter is complicated by the claim of the Alexandria & Fredericksburg road to ownership of a part of the road-bed of the old Alexandria & Washington road.

Jacksonville, Pensacola & Mobile.

Mr. Dennis Egan, Agent for the State of Florida, reports to the Governor that he took possession of the road June 1, under order of the court. He found it absolutely destitute of supplies, even of the most necessary kind, without books or records, and in very poor condition, and this at the season of

lightest receipts. He was compelled to organize everything new, and to proceed in the most economical manner possible. For the six months from June 1 to Nov. 30 the receipts and expenses were as follows:

Receipts (\$1.77 per mile).....	\$126,486 36
Expenses (91.05 per cent.).....	115,180 90
Balance.....	\$11,305 46

As much as possible has been expended in improving the condition of the road and equipment. Mr. Eagan believes that the traffic can be increased by cultivating the Chattahoochee River business, and he has done what was possible to that end. He thinks also that the expenses of management are considerably increased by the separation of the road from the Florida Central.

East Berlin Branch.

The grading of the whole seven miles of this road is completed and track is laid for three miles of the distance. The work has been temporarily stopped by severe weather.

Pittsburgh & Castle Shannon.

At a meeting of stockholders held in Pittsburgh, Dec. 21, it was voted to authorize an issue of \$150,000 new 7 per cent. bonds. The company's road is six miles long and it owns also a large coal property; its bonded debt by the last report was \$237,000.

Montpelier & Wells River.

The bondholders took possession of this road Jan. 1, the time fixed for the company to redeem it then expiring and the company failing to pay up the arrears of interest. The road is 38 miles long, from Montpelier, Vt., east by south to Wells River. There are about \$800,000 first-mortgage bonds outstanding, of which \$433,000 are held by Mr. D. R. Sortwell, of Cambridgeport, Mass. The company has been reorganized with Mr. Sortwell as President. The capital stock of the new company is fixed at \$800,000, the amount of the bonds, which will be converted into stock.

Montclair & Greenwood Lake.

Work has been begun on an extension of two miles from the present terminus at Greenwood Lake northward along the lake shore. The company expects to secure a considerable traffic in ice this year, as a number of ice-houses have been put up at Greenwood Lake and a large quantity of ice will be cut there.

Lehigh Valley.

Under a new arrangement for the division of passenger traffic between this company and the New Jersey Central, only one passenger train a day each way is run over the New Jersey Division to accommodate the local travel, through passengers going to Easton over the Central. West of Easton the bulk of the passenger business will be carried by the Lehigh Valley, the Central running only one or two trains over its Lehigh & Susquehanna Division. This arrangement will permit of a considerable reduction in passenger train service and a corresponding decrease in expenses on both roads, their lines being parallel and close together nearly all the way from Jersey City to Wilkesbarre and for many miles running almost side by side, with only the Lehigh River between.

Anderson, Lebanon & St. Louis.

At a recent meeting of the directors W. K. Pierce and T. H. Messick were appointed a committee to negotiate the sale in England of sufficient bonds to secure the completion of the road.

Philadelphia & Atlantic City.

Work on this road was begun a short time since on the meadows near Atlantic City, N. J., but has been stopped by an injunction sued out by a land-owner over whose property the line passes, and whose land had not been condemned.

Waukon & Mississippi.

It is said that the iron has been bought for this road, which is to extend from Waukon, Ia., eastward to the Chicago, Dubuque & Minnesota at Paint Creek, about 23 miles.

Dallas & Wicoma.

The first iron for this road has been delivered at Dallas, Tex., and track-laying was to be begun as soon as the holidays were over.

ANNUAL REPORTS.

Philadelphia & Reading.

The following figures and statements are from President Gowen's report for the year ending Nov. 30, 1876. The detailed reports, those of the Treasurer, Superintendent, Chief Engineer, etc., are not yet published.

The earnings for the year were as follows:

	1875-76.	1874-75.	Inc. or Dec.	P. c.
Travel.....	\$2,433,685	\$1,862,769	Inc.	\$570,916 30.6
Merchandise.....	2,949,501	3,026,008	Dec.	76,507 2.5
Coal.....	6,708,862	7,636,699	Dec.	928,017 12.2
Mail.....	54,043	54,043	Inc.	441 0.8
Miscellaneous.....	81,159	81,408	Dec.	249 0.3

Gross receipts.....	\$12,227,511	\$12,660,927	Dec.	\$433,416 3.4
Gross expenses.....	8,510,350	8,180,159	Inc.	330,191 4.7
Net profits.....	\$3,717,161	\$4,539,768	Dec.	\$822,607 18.0
Per cent. of expenses.....	69.6	64.2	Inc.	5.4 8.4

The road worked remains as at the last report, 96.4 miles main line and 228.6 miles branches owned; 416.4 miles branches leased and 56.4 miles controlled, being 799.8 miles in all.

The receipts and expenses per passenger and per ton, including renewal fund, rent of laterals, taxes, etc., were:

	1876.	Cost.	1875.	Cost.
Per passenger.....	\$0.223	\$0.162	\$0.268	\$0.194
Per ton of merchandise.....	1.183	0.794	1.112	0.717
Per ton of coal.....	1.451	1.029	1.760	1.108
Per ton of coal, including tonnage of laterals.....	1.199	0.850	1.387	0.878
Excluding rentals, taxes, etc., and including only actual working expenses, the average result was:				
Per passenger.....	\$0.223	\$0.119	\$0.268	\$0.153
Per ton of merchandise.....	1.183	0.563	1.112	0.531
Per ton of coal.....	1.451	0.741	1.760	0.814
Per ton of coal, including tonnage of laterals.....	1.199	0.612	1.387	0.645

The comparative traffic for the last three years was as follows:

	1875-76.	1874-75.	1873-74.
Number of passengers.....	10,936,167	6,936,129	6,964,869
Tons of coal, 2,240 lbs.....	5,995,267	5,605,465	6,348,812
Tons of merchandise, 2,000 lbs.....	2,493,277	2,720,208	3,066,831
Company's material, 2,000 lbs.....	432,222	581,984	493,591
Total tonnage (2,000 lbs.) including weight of passengers and company's material.....	10,236,326	10,099,040	11,336,261

Passenger and tonnage mileage are not given, but the passenger traffic was equivalent to the carriage of 1,331,949 passengers over the main line.

The report says: "The great increase in the number of passengers carried is due to the travel to and from the Centennial

Exhibition, held in Fairmount Park, in the city of Philadelphia, to accommodate which a new passenger station was erected in the Park, a large number of passenger cars and some locomotives built, and various connections made between the several lines of the Company in the vicinity of the Exhibition grounds, all of which constructions and improvements are fully referred to and described in the reports of the Chief Engineer and General Superintendent herewith submitted. During the term of the Exhibition 3,295,120 passengers were carried to and from the new station without accident to any resulting from the fault of the Company or the neglect of its employees.

"There is but little of any particular interest to report as to the several branch lines of railways and canals. The loss upon the canals is shown by the transportation and income account. The loss upon the Catawissa Branch for the year was \$122,647.66 against a loss of \$157,001.14 for the previous season, but this loss, which is charged to expenses, was more than made up by the earnings of the Main Line from the traffic thrown upon it by the Catawissa Branch. The traffic of the Perkiomen Railroad has increased, and the new line of railroad from Lancaster to Quarryville has fully justified the expectations regarding it, and proved to be a valuable acquisition for the Reading & Columbia Railroad Company. The profit from the working of the Germantown & Norristown Branch has been larger than ever before realized, the number of passengers carried being 6,346,193, against 4,299,490 the previous year, almost the entire increase, however, being due to the travel to and from the Centennial Exhibition, a large proportion of which was moved upon that line.

"The express business has resulted in a net profit of \$62,229.40 against \$61,591.50 for the year 1875. The constant increase in the value of this business to the company in the face of the most active opposition and competition from the Adams Express Company, has been most gratifying, and after so many years of thorough trial the result obtained may be considered as demonstrating the fact that railroad companies can in most cases derive more money from transacting their own express business than by farming out to a separate company the right to control their most profitable traffic.

"The following table shows the result of the working of the line of steam colliers owned by the company in comparison with that of previous years:

Year.	Tons of coal carried.	Total receipts.	Total expenses.	Net profits.	Average rate of freight received per ton.
1872	127,275	\$365,460.03	\$237,818.26	\$127,641.77	\$2.62
1873	138,673	369,296.33	262,111.04	107,185.29	2.32
1874	217,340	300,636.26	294,045.41	6,590.85	1.29
1875	345,145	491,039.50	418,479.61	72,559.89	1.15
1876	490,116	657,901.12	460,874.58	197,026.54	1.04

"Included in the item of total expenses of 1876 is the sum of \$73,800 for insurance fund, which is now in credit \$213,117.54.

"The demands of the company for new rails not being sufficient to keep the rolling mill in active operation during the entire year, that property has been leased to the Philadelphia & Reading Coal & Iron Company, who will hereafter control its operations, in order to sell to others the surplus product not required by the Railroad Company."

A statement given in the report shows the total product of rails from this rolling mill laid in each of the past nine years and the quantity worn out and removed for the same time. The total product has been 141,973 tons, of which 20,735½ tons, or 14.6 per cent., have been worn out, the amount varying from 4,809½ tons, or 55.5 per cent., of the rails rolled in 1868, to 3½ tons, or 0.03 per cent., of those rolled in 1876.

Including the sinking funds of the year the total amounts heretofore charged income account for the various sinking funds of the company, and for which no increase of capital has been made, is \$1,700,442.98, which has been either expended, or is yet held.

As condensed from the transportation and income account the result of the year's business may be stated as follows:

Receipts over cost of working the road.....	\$3,717,160 74
Profit on steam colliers.....	197,026 54
Total.....	\$3,914,187 30

From which deduct:	
Loss on Schuylkill Canal.....	\$242,473 96
Loss on Schuylkill Canal Transportation.....	4,379 31
Line.....	163,096 52
Loss on Susquehanna Canal.....	279,051 40
Drawbacks, bad debts, Richmond barges, less credit balance, Richmond shipping expenses.....	112,750 22
Total.....	801,751 41

Balance.....	\$3,112,436 89
Amount to credit of reserved fund, 1875.....	\$999,517 46
Dividend of January, 1876, and State tax.....	\$934,077 55
Preferred stock dividend, July, 1876, and tax.....	50,201 17
Total.....	993,737 72
Total.....	4,238 74

From which deduct:	
Interest on bonded debt.....	\$3,857,969 00
" bonds and mortgages.....	113,618 68
Sinking funds, consolidated and improvement mortgages.....	450,800 00
Sinking fund, general mortgage.....	\$214,000 00
Less 5 cts. per ton from P. & R. Coal & Iron Co. and balance (\$2,689-23) from 1875.....	162,094 47
Total.....	51,965 53
Debit balance charged to profit and loss.....	\$1,355,708 58

The report says:

"It will be seen from the above statements that the net profits of the company for the year just closed have been insufficient to meet the fixed charges, and that after deducting the losses upon the canals and providing for interest and sinking funds there is a deficiency of \$1,355,708.58. It is but right to say that this result is not alone due to the great depression in business and the depreciation of values, but that it was caused to a very great extent by the unfair workings of the association of coal producing and transporting companies, by which this company in the months of June, July and August was practically deprived of its proper share of coal tonnage and was for the time being unable to protect itself. Up to the 1st of June, notwithstanding the depression of business, the net profits were quite satisfactory and gave every indication that the result of the year's traffic would not only be sufficient to meet all fixed charges, but leave something to the credit of net income, and in the face of the most unexampled reduction of rates of tolls and transportation following the disruption of the coal association, the result of the last three months' traffic has demonstrated that when left to itself to secure tonnage, the company's unexampled facilities and equipment will always enable it to earn enough to meet all of its fixed charges. The effect upon the business of the company of the cause above mentioned, will be referred to in more detail hereafter, in connection with the

operations of the coal and iron company, and it will be enough here to say that in the three months of June, July and August, at customary rates of charges and fair prices for coal, the entire net profits from railway traffic amounted to but \$700,051.74, or very much less than half of what was realized from the same source of income in the three following months, when the rate of transportation had been reduced from 30 to 50 per cent., and the price of coal had fallen about \$1.75 per ton."

The reports give a long and interesting account of the causes which led to the organization of the Philadelphia & Reading Coal & Iron Company, and the addition of the business of mining and selling to that of transporting coal. It is claimed that this was necessary to preserve and secure the company's business, and further, that by better management and improved methods the cost of producing coal has been much reduced, and by the company's determined and energetic course the power of the trades-unions, which formerly controlled the mining districts, has been broken.

The loss on the year's business of the Coal & Iron Company was \$203,642.59, after charging off for depreciation of the stock of coal on hand at the dissolution of the Coal Association the large sum of \$931,705.45. This loss was increased to \$653,359.03 by charges of \$138,391.36 for bad debts, etc., and \$311,325.08, depreciation of property and stock of iron on hand and loss on contracts for iron.

The report says: "This company had frequent cause to complain in previous years of violations of the spirit of the agreement, but during the summer of the past year the great overproduction by one of the companies, persisted in, after repeated promises and pledges to comply with its engagements, left no doubt upon the minds of the representatives of some of the other regions that the object of the offending company was to increase its tonnage by professing to agree to terms with which it never intended to comply, and, after three or four months of unavailing negotiation and attempts at compromise, the association itself was dissolved and each company thrown into active competition for the market. No better commentary upon the working of the association can be made than to say that, while faithfully keeping all of its obligations to the other members, this company, during the three years and nine months of the existence of the compact, received 797,237 tons less than the proportion of the entire actual shipments to which it was entitled under the terms of the agreement, and the great injury resulting from the workings of the association during the year is best explained by the following table, showing the fluctuations in the business of both companies during the three months immediately preceding and the same period immediately following the dissolution of the agreement between the associated companies:

FOR JUNE, JULY AND AUGUST.	
Profit from railroad traffic.....	\$700,051 74
Profit from other business.....	26,444 96
Total.....	\$726,496 72

Deduct—	
Loss on Coal & Iron Company.....	\$487,047 54
Loss on canals and barge lines.....	114,462 70
Total.....	\$601,510 24

Total profit of both companies..... \$124,986 48

FOR SEPTEMBER, OCTOBER AND NOVEMBER.	
Profit from railroad traffic.....	\$1,537,877 21
Profit from canals, colliers and barges and other business.....	226,190 86
Total.....	\$1,764,068 07

Profit of Coal & Iron Company..... 168,364 63

Total profit of both companies..... \$1,932,432 70

"And this amount of \$1,932,432.70, as the profits of three months of active competition at low rates and prices, is obtained after charging off \$140,978.85 for depreciation of stock and materials at the end of the year.

"A reference to the balance sheets of the two companies will show that on the 30th of November the interest held by the Railroad Company in the Coal & Iron Company is represented as follows:

1. By the entire capital stock of the Coal & Iron Company.....	\$8,000,000 00
2. By the \$30,000,000.00 bond and mortgage of the Coal & Iron Co., now held by the trustees of the general mort. loan—first for the consolidated mortgage and second for the general mortgage, say.....	\$30,000,000 00
Less reduced by sinking fund.....	262,094 37
Total.....	29,737,905 63
3. By a new mortgage of \$10,000,000 00.....	10,000,000 00
4. By an open book debt of.....	980,040 98
Making a total of.....	\$40,718,006 61

"This increase of capital stock of \$7,000,000, and the new mortgage of \$10,000,000, were recently made to liquidate to that extent the open indebtedness of the Coal & Iron Company to the Reading Railroad Company, which indebtedness had been greatly increased during the past year by the assumption of the floating debt of the former by the latter company. As the great bulk of the indebtedness of the Coal & Iron Company is to the Railroad Company, and as in the absence of any profit to justify it no interest need be paid upon it, the only annual charge which the Coal & Iron Company must bear at all times is the interest due to the public.

"The entire amount of indebtedness due by the Coal and Iron Company to the public is as follows:

Mortgage bonds on coal lands, guaranteed by the Philadelphia & Reading Railroad Company.....	\$13,192,500 00
Other mortgages.....	804,541 68
Debt on bonds guaranteed by the Philadelphia & Reading Railroad Company.....	1,731,000 00
Total.....	\$15,728,041 68

and the annual interest charge upon the above is now \$989,575. A mere royalty of about 33 cents per ton upon the coal taken from the lands during the last year would supply enough to meet this interest, and it is confidently believed that a sum less than 30 cents per ton as rent or royalty of the coal which will be taken from the estate during the coming year will furnish sufficient to meet all the interest which the company is obliged to pay to the public. With the improvements already made upon the property and the facilities thereby obtained for economical mining, the managers feel that even if the business of mining coal during the coming season is as ruinous as it has been during the last year, and the prices as low as those which have prevailed during the last three months, a sum sufficient to pay the interest charges of the Coal & Iron Company can be made out of the receipts from tenants, and out of a fixed sum saved from the proceeds of each ton mined by the Company as representing a moderate royalty.

Of the present condition of the company and its floating debt the report says: "The entire annual fixed charges of the Railroad Company are as follows:

Interest on bonded debt.....	\$4,161,749
Interest on bonds and mortgages.....	113,618
Sinking funds for 1877.....	\$674,000
To be provided by the Coal & Iron Company, say.....	170,000
Total.....	\$5,019,367

"In the above statement the interest is calculated at its face value, no account being taken of the premium on gold or the cost of exchange necessary to pay the interest in Europe, as

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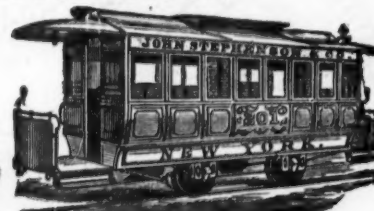


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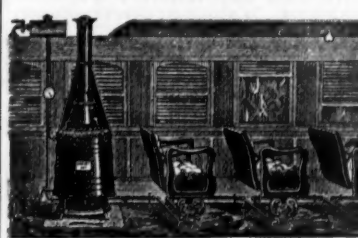
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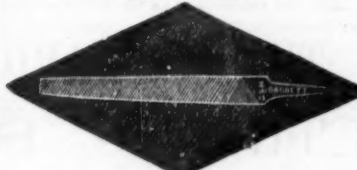


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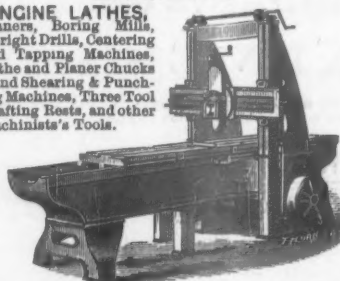
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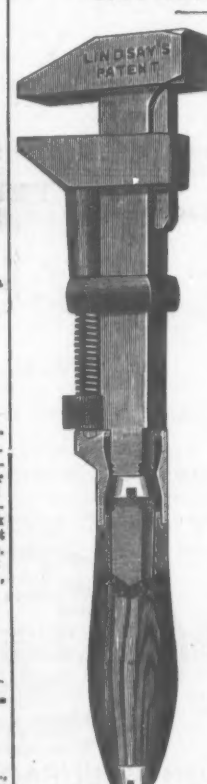


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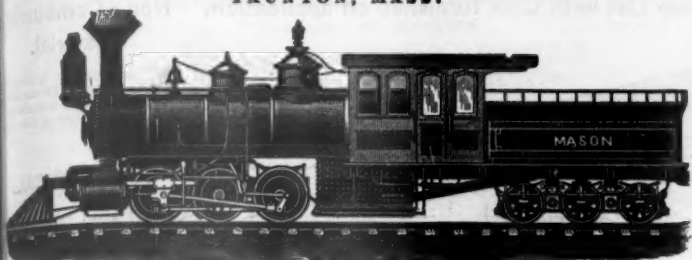
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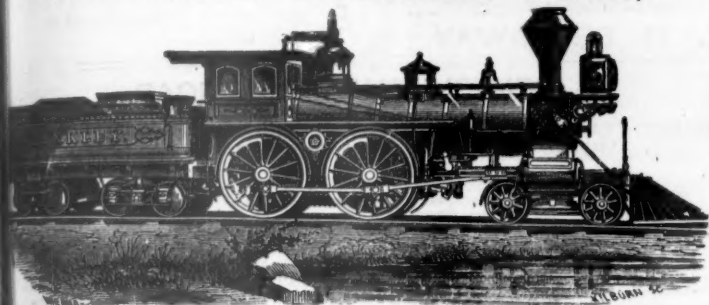


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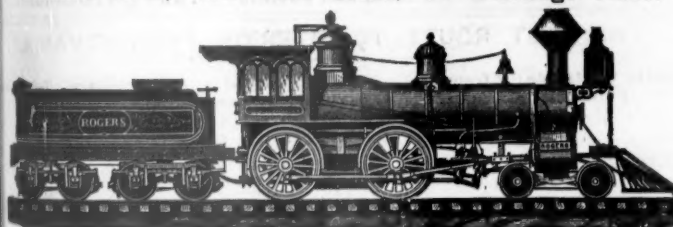
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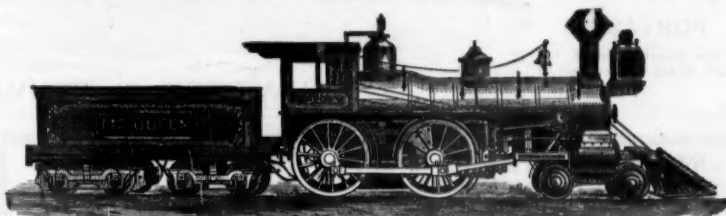
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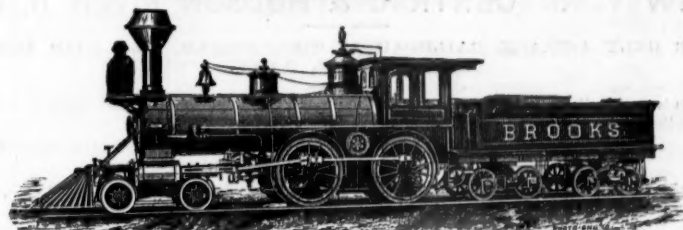
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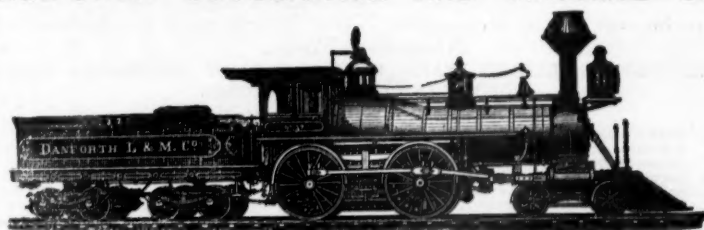
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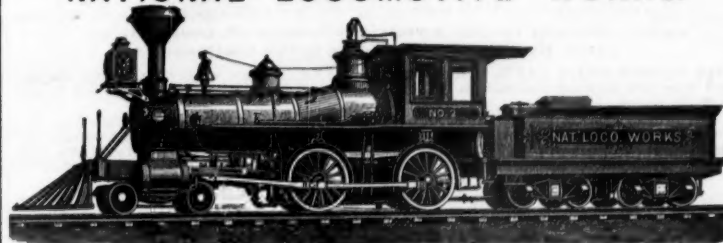


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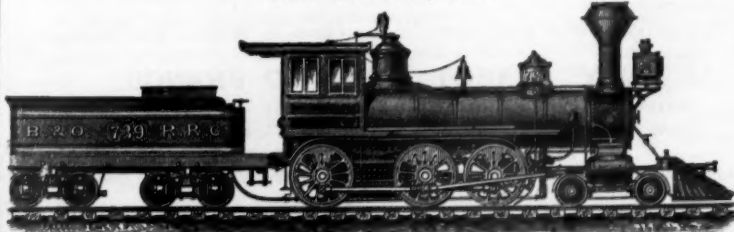
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On the arrival of the trains from East or South, the trains of the Chicago & Northwestern Railway leave CHICAGO as follows:

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For Milwaukee—Four through trains daily. Pullman Cars on night trains. Pullman parlor cars on day trains.

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Connecting with Trains on the Union Pacific Railroad for CHEYENNE, DENVER, CENTRAL CITY, OGDEN, SALT LAKE, WHITE PINE, HELENA, SACRAMENTO, SAN FRANCISCO, and Points in Upper and Lower California, and with Ocean Steamers at San Francisco, for all points to China, Japan, Sandwich Islands, Oregon and Alaska.

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OMAHA AND LEAVENWORTH EXPRESS (Saturdays excepted)..... 10.00 P. M. 6.50 A. M.

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CONNECTING WITH KANSAS RAILROADS,

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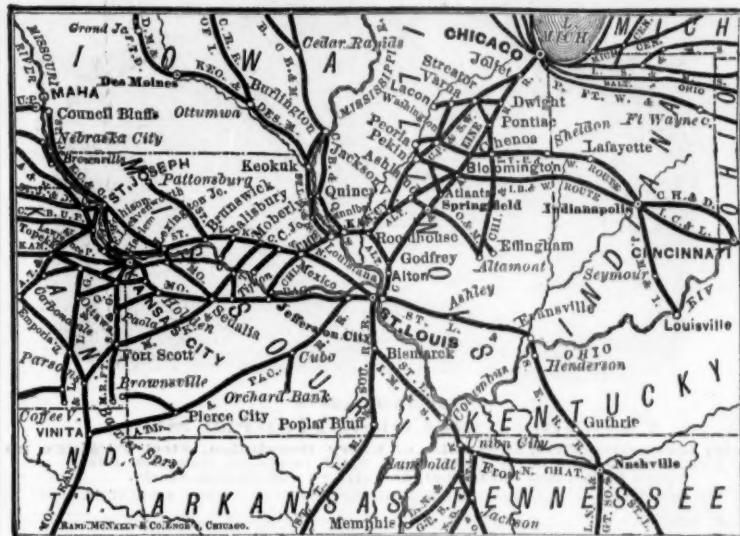
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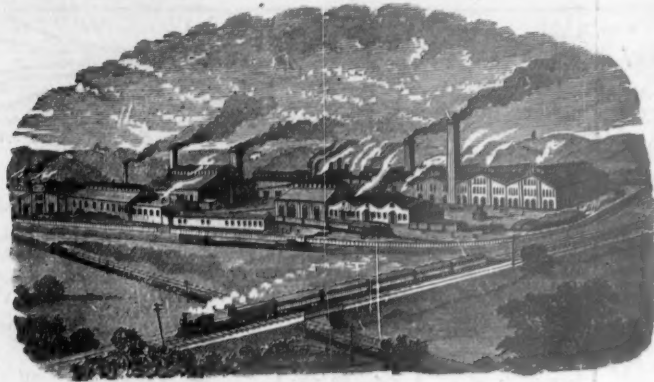
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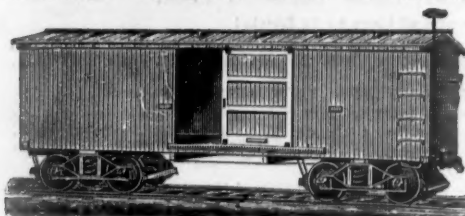
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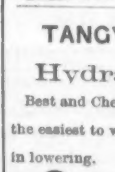
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